

Exhibit AF 1.00  
Docket 83-0309

PREPARED TESTIMONY

OF

EDWARD BODMER

ACCOUNTS AND FINANCE SECTION

PUBLIC UTILITIES DIVISION

ILLINOIS COMMERCE COMMISSION

ILLINOIS COMMERCE COMMISSION  
On Its Own Motion

Investigation into the  
appropriate accounting treat-  
ment of the deferred tax  
reserve resulting from changes  
in statutory income tax rates.

DOCKET NO. 83-0309

JULY 1983

1 1. Q. Please state your name and business address.

2  
3 A. My name is Edward Bodmer. My business address is  
4 160 N. LaSalle Street, Chicago, Illinois 60601.  
5

6 2. Q. Briefly describe your qualifications and background.

7  
8 A. I have been employed at the Illinois Commerce Commission  
9 in the Accounts and Finance Section since June 1979. I  
10 graduated with honors from the University of Illinois in  
11 May, 1979 and I am currently enrolled at the business  
12 school of the University of Chicago.  
13

14 INTRODUCTION  
15

16 3. Q. What is the purpose of your testimony?  
17

18 A. My testimony will deal with issues related to the appropriate  
19 treatment for changes in statutory income tax rates under  
20 interperiod tax allocation (including but not limited to the  
21 latest federal income tax rate change in 1979).  
22

23 Since the federal government first allowed accelerated deprecia-  
24 tion for computing taxes in 1954, there have been significant  
25 controversies on how to deal with timing differences between

1 income on a utility's financial books and income of the  
2 Company's tax returns. Issues of flow-through vs. normaliza-  
3 tion and how to deal with tax rate changes (if normalization  
4 is adopted) are not issues that have suddenly appeared in the  
5 last few years. It is my opinion that the issue of how to  
6 deal with income tax rate changes needs to be resolved ex-  
7 pediently so that appropriate adjustments can be made in up-  
8 coming rate cases.

9  
10 4. Q. Please summarize your conclusions and recommendations.

11  
12 A. I conclude that the current method used by the Illinois  
13 Commerce Commission to account for changes in statutory  
14 income tax rates under interperiod tax allocation should  
15 be revised. This probably will necessitate a change in  
16 the Uniform System of Accounts and will undoubtedly have  
17 impacts on future rate levels. Specific adjustments to rates  
18 however, must be made through upcoming definitive rate cases  
19 and not as a part of this docket. Furthermore, changes in  
20 the accounting for individual firms should also be postponed  
21 until it is matched to the ratemaking.

22  
23 5. Q. Please briefly outline the current accounting prescribed by  
24 the Illinois Commerce Commission as it relates to interperiod  
25 tax allocation.

1       A.   The Illinois Commerce Commission began using the deferred  
2       method to account for book/tax timing differences as early  
3       as December, 1953.<sup>1</sup> A year later, when the federal government  
4       first instituted accelerated depreciation, the Uniform System  
5       of Accounts for Electric and Gas Utilities was revised to pro-  
6       vide deferred tax accounting by stating that Accumulated  
7       Deferred Taxes (Account 282) shall be credited

8  
9               "with an amount equal to that by which taxes on  
10              income payable for the year are lower because of  
11              the use of liberalized depreciation in computing  
12              such taxes ... as compared to the depreciation  
13              deduction ... according to the straight line  
14              or other non-liberalized method of depreciation."

15  
16             Once amounts are accumulated in the Account 282, the Account  
17             is reduced or debited "with an amount equal to that by  
18             which taxes on income payable for the year are greater  
19             because of the use in prior years of liberalized deprecia-  
20             tion for tax purposes..." In other words, credits to  
21             accumulated deferred taxes are calculated as the excess  
22             of book depreciation over tax depreciation multiplied by  
23             the current income tax rate.

24  
25             The Uniform System of Accounts also states:

<sup>1</sup>See CILCO Docket #40757

1 "Any remaining balance in the deferred tax reserve  
2 balance ... upon retirement from service of such  
3 property ... shall be credited to Account 411,  
4 Income Taxes deferred in prior years - Credit, or  
5 otherwise applied as the Commission may authorize  
6 or direct."  
7

8 6. Q. What is the effect of this accounting treatment when the  
9 statutory income tax rate changes?  
10

11 A. If there is a change in the tax rate, the credits to the  
12 accumulated deferred tax reserve will not match the debits  
13 and there will either be a "deficit" or a "surplus" reserve  
14 in the deferred tax account upon retirement of an asset.  
15 The issue in the current proceeding is whether or not the  
16 current accounting treatment should be revised, and if so,  
17 how it should be revised. Most, although not all, of the  
18 theoretical questions raised by this issue involve timing of  
19 cash flow to the utility, "intergenerational" equity con-  
20 siderations, and proper accrual accounting for income tax  
21 expenses. My testimony will attempt to provide a framework  
22 by which the Commission can analyze the problem from an  
23 accounting, economic, and a financial perspective. I will  
24 first discuss some accounting questions and subsequently  
25 analyze effects on economically correct and equitable utility

1                   prices through time.

2

3

4    7.    Q.    Do you have any other introductory comments?

5

6           A.    Yes.   The Illinois Commerce Commission has previously

7                   expressed concern about whether a departure from the

8                   currently prescribed accounting might cause utilities

9                   to lose certain tax benefits due to IRS regulations.

10           \* I will discuss this issue separately after testifying

11           to the proper theory regarding "surplus" or "deficit"

12           deferred taxes.

13

14

15    8.    Q.    Please discuss the structure of the balance of your

16                   testimony.

17

18           A.    I will first discuss accounting issues, next certain

19                   economic issues, and finally IRS consideration. Exhibit

20                   AF-1 contains a theoretical discussion on the effects on

21                   asset cost and valuation.

22

23

24

25

26

\* See for example Docket 80-0546, Page 28.

ACCOUNTING ISSUES

9. Q. Please describe the current generally accepted accounting principles regarding deferred taxes.

A. In APB opinion 11, the AICPA discusses both the "liability" and the "deferred" method for accounting for interperiod tax allocation. Under the deferred method:

"the deferred taxes are determined on the basis of tax rates in effect at the ~~time~~ the timing differences originate and are not adjusted for subsequent changes in tax rates ..." (emphasis added)

Furthermore, the AICPA states that

"The Board has concluded that the deferred method of tax allocation should be followed since it provides the most useful and practical approach to interperiod tax allocation and the presentation of income taxes in financial statements."

The AICPA also discusses the "liability method" whereby "the initial computations (of deferred taxes) are considered to be tentative and subject to future adjustment if tax rates change ..."

1           The balance of my testimony will discuss issues related to  
2           these and other methods for computing deferred taxes.

3  
4   10.   Q.   Please discuss the alternative accounting treatments for  
5           deferred taxes more specifically.

6  
7           A.   Although the AICPA discusses the fact that under the  
8           liability method, deferred taxes are subject to "future  
9           adjustment" if the tax rate changes, the question of how  
10          this adjustment should be made is not clearly delineated.  
11          I will discuss five possible methods of adjusting deferred  
12          taxes for tax rate changes, as well as the option that no  
13          adjustment should be made. Finally, I will describe the  
14          "South Georgia" method utilized by the Federal Energy  
15          Regulatory Commission. These alternative treatments for  
16          deferred tax accounting subsequent to an income tax rate  
17          change can be summarized as follows:

18  
19          (1)   Make no special adjustment to the accumulated deferred  
20                tax account when the tax rate changes (the "deferral  
21                method").

22  
23          (2)   Wait to adjust any remaining balance in accumulated de-  
24                ferred taxes from a tax rate change until retirement of  
25                the asset.



1 (3) Adjust any "excess" accumulated deferred taxes (to  
2 be defined subsequently) in the period of the change  
3 in statutory income tax rates.

4  
5 (4) Amortize any "excess" accumulated deferred taxes over  
6 the remaining life of the plants which created the  
7 book/tax timing differences.

8 (5) Amortize any "excess" accumulated deferred taxes over  
9 an established period longer than one year.

10  
11 (6) Compute debits to the accumulated deferred tax  
12 account at a "weighted average" income tax rate.

13  
14 (7) Utilize the "South Georgia Method" proposed by  
15 the FERC.  
16

17  
18 Method 1 - Do Not Make an Adjustment to Deferrals for a Tax Rate Change.  
19

20 11. Q. Please discuss alternative number one, the option of not  
21 making an adjustment to the accumulated deferred tax  
22 account when the statutory income tax rate changes.  
23

24 A. Under this method, deferred taxes are calculated by simply  
25 applying the current income tax rate to the difference between

1 expenses on the financial books and expenses on the tax  
2 books of a company.\* If the tax rate changes at any time  
3 during the book life of an asset, this method will result in  
4 a debit or credit balance remaining in the deferred tax  
5 account once an asset is fully depreciated since the additions  
6 to accumulated deferred taxes will not equal deductions from  
7 the account. I define this remaining balance as "excess" or  
8 "deficit" accumulated deferred taxes. (If the tax rate has  
9 decreased the remaining credit balance will be positive,  
10 if the rate has decreased the accumulated deferred tax will  
11 have a debit balance.)

12  
13 Proponents of this method may argue that from a "matching"  
14 standpoint, the tax expense should reflect taxes which would  
15 have been paid if the tax return had reflected the same timing  
16 of expenses and revenues as the financial statements. They  
17 could reason that this was the function of normalizing book/  
18 tax timing differences in the first place. For example if  
19 \$100 of depreciation reflects the appropriate amount of expense  
20 on the books of a company, proponents of this option would  
21 argue that tax expense should be based on this \$100 expense  
22 at the current tax rate, no matter what the actual tax depreci-  
23 tion deductions are, or what past tax payments have been or  
24 what future tax liabilities will be.

25  
\*In fact the deferred tax computations are more complex for instance, deferrals due to a depreciation expense timing differences must be adjusted for AFUDC. Furthermore, "permanent" differences must obviously be taken into account separately in income tax deductions.

1       Advocates of not making an explicit adjustment to accumulated  
2       deferred taxes when the tax rate changes might also downplay  
3       the level of accumulated deferred taxes on the balance sheet,  
4       arguing that it is impossible and futile to predict future  
5       income tax rates. Thus if accumulated deferred taxes on the  
6       balance sheet do not reflect a liability for future income  
7       taxes at the current rate, we should not worry. The govern-  
8       ment might, after all, change income tax rates in the opposite  
9       direction in the future.

10  
11       Finally, proponents of this alternative could argue that the  
12       ease of computing credits to deferred taxes is a benefit of  
13       this alternative that offsets any theoretical problems the  
14       option may entail.

15  
16       Some opponents of Method 1 reason that deferred taxes related  
17       to an asset should in fact measure the amount of taxes that  
18       must be paid in the future due to past timing differences, and  
19       that the best estimate of future tax rates is generally the  
20       current income tax rate. They would argue that if expected  
21       payments in the future change, this is a change in owners  
22       equity that must be recognized on the income statement. The  
23       arguments can be illustrated by the analogy of deferred taxes  
24       representing an "interest free loan" from the government where  
25       tax depreciation deductions are "loaned" to earlier periods by

1 the government without interest requirements (the benefits of  
2 which are passed along to consumers). To illustrate the  
3 analogy I pretend that a "Mr. Nice Guy" (or "Big Brother") makes  
4 us a \$1,000 loan at an interest rate of zero that is to be paid  
5 off in ten years. I assume that we record a \$1,000 liability  
6 when we receive the loan.\* Now pretend that "Mr. Nice Guy"  
7 suddenly tells us that we will in fact only have to pay off  
8 \$500 of the loan ten years from today. If our obligations to  
9 make cash payments in the future have been reduced, then our  
10 owners equity or income has increased. This increase in  
11 wealth should obviously be recorded on the income statement.  
12 Now I change the name of "Mr. Nice Guy" to "Uncle Sam" and  
13 call the interest free loan deferred taxes. The accounting  
14 theory has not changed -- if future estimates of tax payments  
15 have gone down, then income should be recognized through a  
16 decrease in tax expense (with additional credits to deferred  
17 tax expenses).

18  
19 Others argue that deferred taxes are more properly a reduction  
20 on the net cost of the asset. Exhibit AF-1 demonstrates that  
21 if deferred taxes are treated as a reduction in the net value  
22 of an asset, and deferred taxes are adjusted for tax rate changes,  
23 the firm's balance sheet will better reflect the economic  
24 resources of a company. The exhibit fully discusses the fact  
25 that making an adjustment to deferred taxes after a tax rate

\*Technically the present value of the liability should be recorded.

1 change better reflects a firm's net assets or its net  
2 wealth.

3  
4 From a ratemaking standpoint, there are significant inter-  
5 generational equity implications surrounding the option of  
6 making no adjustment to accumulated deferred taxes when the  
7 tax rate changes. Although many of these implications will  
8 be more fully discussed in subsequent sections of my testi-  
9 mony, it is immediately apparent that:

10  
11 (1) If ratepayers have paid income taxes  
12 under the assumption that taxes would  
13 eventually be payable, and these taxes  
14 will never materialize because of a tax  
15 rate change, the ratepayers who made  
16 these payments should recover some direct  
17 benefit.

18  
19 (2) Since an amount will remain in the  
20 accumulated deferred tax account  
21 even after the retirement of the  
22 asset, ratepayers who pay no costs of  
23 a plant may receive benefits in terms  
24 of the rate base deductions after the  
25 plant is retired.

1 Finally, the argument that the method is computationally  
2 simple might be very important in a non-regulated environ-  
3 ment. When prices are based on an accounting information  
4 as in the regulated sphere, however, minor computational  
5 complexities must be given little weight.

6  
7 Exhibit AF-2 demonstrates this method with a \$100 asset,  
8 a tax life of 16 years, a book life of 25 years, and tax de-  
9 preciation computed as the maximum of the double declining  
10 balance, sum of years digits, or straight line methods.

11  
12 Method 2 - Adjust Deferred Taxes in the Year of Retirement of  
13 an Asset

14  
15 12. Q. Please discuss alternative number two which is similar  
16 to the method discussed above except that any balance in  
17 the accumulated deferred tax account is removed upon  
18 retirement of an asset.

19  
20 A. This is the methodology seemingly described in the current  
21 system of accounts for electric and gas utilities. Until the  
22 date of retirement of an asset, the results are similar to  
23 those produced when no adjustment is made to deferred taxes  
24 due to a tax rate change. When an adjustment is made in the  
25 year of retirement, however, important differences between  
26 the two alternatives arise:

1 (1) If because of a decline in tax rates, ratepayers  
2 paid more through accrued tax expenses than will  
3 actually be incurred, one could interpret this  
4 alternative as giving the taxes back to ratepayers  
5 in the year of retirement of the asset. Thus,  
6 since the accumulated deferred tax account is re-  
7 moved from the books upon retirement of an asset,  
8 future ratepayers who pay no costs associated with  
9 the asset cannot benefit from the "left-over"  
10 accumulated deferred tax deductions (unlike  
11 alternative number 1).

12  
13 (2) Under this alternative, ratepayers may get a  
14 sudden reduction in rates at the retirement of a  
15 large asset. This sudden reduction (of course  
16 the reduction would be an increase if tax rates  
17 had risen) may be unfair to certain classes and it  
18 may never occur either if the Commission construes  
19 the adjustment as non-recurring, or if the plant  
20 retirement date does not happen to occur in the  
21 test year of a definitive rate case. Some could  
22 interpret such a possibility as a windfall to  
23 stockholders from ratepayers.

1 (3) In the year of retirement of an asset under this  
2 method, tax expenses are not matched to both current  
3 tax rates and book expenses. This procedure is  
4 simply postponing the period for making an adjust-  
5 ment to accumulated deferred taxes for as long as  
6 possible. Eventually, however, an adjustment is  
7 made which in the opinion of certain people would  
8 "distort" the income statement in that period.

9  
10 (4) In Exhibit AF-1, I argue that the net assets of a  
11 firm (and thus the net wealth) change exactly when  
12 the tax rate changes. Thus waiting until the asset is  
13 retired does not adjust income tax expense during the  
14 period when the real "economic" event has occurred.

15  
16 Exhibit AF-3 illustrates this methodology using the  
17 same parameters as those used in Exhibit AF-2.

18  
19 Method 3 - Adjust Accumulated Deferred Taxes in One Period

20  
21 13. Q. Please discuss the advantages and disadvantages of method  
22 number 3, adjusting "surplus" deferred taxes in the period  
23 of the statutory income tax rate change.

24  
25 A. To analyze this option I define the "appropriate" reserve



1 for deferred taxes as the amount which taxes paid will be  
2 greater than taxes expensed in the future. This "appropriate  
3 reserve" can be calculated for an individual asset by multiply-  
4 ing the remaining book depreciation less the remaining tax  
5 depreciation by the current tax rate. Under method number  
6 3, an adjustment is made to credits of the accumulated  
7 deferred taxes any time the "proper" reserve differs from  
8 the amount of accumulated deferred taxes on the balance  
9 sheet (or any time the statutory income tax rate changes).  
10 Stated another way, if I define the "surplus" or "deficit"  
11 deferred taxes as the difference between the "appropriate"  
12 reserve and the accumulated deferred taxes on the balance  
13 sheet, this method would "amortize" the "surplus" deferred  
14 taxes in one period. The method is illustrated on Exhibit  
15 AF-4.

16  
17 Proponents of this method might argue that the minute the  
18 income tax rate changes, the liability for future tax pay-  
19 ments (which deferred taxes may represent) also change.  
20 They would argue that this event must be recognized immedi-  
21 ately on the income statement through income tax expense  
22 adjustments. If we return to our "Mr. Nice Guy" analogy,  
23 advocates of this alternative would argue that the day  
24 Mr. Nice Guy tells us he has changed the amount we will  
25 have to pay him back is the same day we should reduce our  
26 liability and recognize income.

1           Advocates of this method may also point out that after a  
2 one period adjustment, income tax expenses are based on book  
3 expenses and the current income tax rate. Furthermore, from  
4 an intergenerational equity standpoint, some might reason  
5 that ratepayers paid too much tax expense before the tax rate  
6 change and the faster they receive their "refund" the better.  
7 Finally, from a computational point of view, this option is  
8 relatively simple, especially if the method has been used in  
9 the past.

10  
11           The principal disadvantage of this alternative is that from a  
12 rate making standpoint a sudden adjustment occurs in one  
13 period. Such a large adjustment to income tax expense may not  
14 be recovered through rates because it may not occur in a test  
15 year or it might be construed as non-recurring expense in a  
16 rate case. Furthermore, in the period of the adjustment, taxes  
17 are radically different than those which would have been pro-  
18 duced by book expenses and the current tax rates. Method #3  
19 is illustrated in Exhibit AF-4.

20  
21   Method 4 - Adjust over the Remaining Life

22  
23   14. Q.   Please discuss method number 4 which would amortize the  
24 "surplus" or "deficit" deferred taxes defined earlier over  
25 the remaining life of an asset.

1           A.    This option reduces some of the sudden rate adjustment problems  
2                of reversing deferrals in one period.  At the same time, the  
3                method also correctly measures the accumulated deferred tax  
4                reserve by the retirement date of the asset.  Additionally,  
5                although keeping track of remaining lives for individual assets  
6                may be more difficult from a computational standpoint, the  
7                calculations are systematic.

8  
9                From a ratemaking standpoint, the method spreads out the  
10               effect of a tax rate change over as many periods as possible  
11               while still establishing the proper reserve by the end of  
12               an asset's life.

13  
14              The principal problem with this alternative lies in the  
15              question of whether there is any theoretical justification  
16              to amortize "surplus" deferred taxes over the remaining life  
17              of the plant as opposed to another amortization period.  
18              Demonstrations of the methodology for various vintages of  
19              assets are presented on Exhibit AF-5.

20  
21   Method 5 - Adjust "Surplus" Deferred Tax Reserve  
22               Over Some Period Longer Than One Year

23  
24   15.   Q.    Please discuss method number 5, making adjustments over some  
25               accelerated amortization period.

1       A.    This option contains many of the advantages and dis-  
2       advantages discussed in Methods number 3 and 4. The question  
3       is whether the compromises reflected in this alternative  
4       produce better net results than the above options. Although  
5       amortization over a period longer than one year may be arbitrary,  
6       the method alleviates some of the shocks produced by adjusting  
7       the deferrals in one period. Furthermore, the alternative  
8       does not prolong the misstatement of expenses on the income  
9       statement over the remaining life of each asset. Additionally,  
10      practical cash flow and financing aspects can be taken into  
11      account through the choice of the amortization period. Finally,  
12      if certain assets already have been retired, and still have a  
13      balance in the accumulated deferred tax account, this may be  
14      the only feasible method to dispose balances in the accounts.  
15      This option is demonstrated as Exhibit AF-6 (for an amortization  
16      period of five years.)

17  
18    16.   Q.    Please describe method #6 -- reversing the deferrals at a  
19               weighted average rate.

20  
21       A.    Under this methodology the reversals or debits to the  
22       accumulated deferred tax account are calculated by applying  
23       a "weighted average" historical tax rate to the excess of  
24       book depreciation over tax depreciation for an asset. This  
25       weighted average tax rate can be calculated for a specific

1           asset as the amount of accumulated deferred taxes divided  
2           by the difference between the remaining book and tax  
3           depreciation.\* The effect of alternative #6 (from the  
4           perspective of a single asset) is that adjustments to the  
5           deferred tax reserve for a tax rate change are delayed  
6           until the book depreciation happens to be greater than the  
7           tax depreciation.

8  
9           The difference between this method and alternatives of  
10          amortizing excess deferred taxes over the remaining life  
11          of property is illustrated by considering the case where  
12          a tax rate change occurs in the early years of an asset's  
13          life. Even though this method recognizes that excess  
14          deferred taxes have been collected, the "weighted-average"  
15          method would delay "refunding" the "excess" deferrals  
16          until book depreciation exceeds tax depreciation. This  
17          is illustrated in Table 1 where even though the re-  
18          quired reserve differs from the accumulated deferred  
19          amount beginning in year #3, no adjustment is made until  
20          year #14 to reflect the change in tax rates. However,  
21          when assets of different vintages are considered, this  
22          method produces very similar results to amortization  
23          over the remaining life. This fact will be demonstrated  
24          in subsequent sections of my testimony.

25  
\*It would be possible to also use a first in first out or some other  
cost-flow assumption other than the weighted average method.

1 The theoretical problems with this method are illustrated  
2 by our loan analogy: Mr. Nice Guy again lends us money  
3 with a \$1,000 zero interest bond. Except now the loan  
4 must be paid back in \$100 installments beginning 10 years  
5 from today. Pretend furthermore that Mr. Nice Guy suddenly  
6 today says that only \$500 of the loan will have to be paid  
7 off beginning in 10 years with \$50 installments. Mr. Nice  
8 Guy has increased our owners equity the day he makes his  
9 benevolent statement. To wait 10 years until the install-  
10 ments are actually due and then only recognize the increase  
11 in wealth (decrease in liability) with each install-  
12 ment would be inappropriate in an accrual accounting  
13 scheme. Now we again change the name of Mr. Nice Guy to  
14 Uncle Sam, and see that reversing deferrals at a weighted  
15 average tax rate would be analagous to waiting until the  
16 loan is to begin being paid off in cash to recognize any  
17 change in value.

18  
19 Exhibit AF-7 demonstrates the weighted average tax rate  
20 method. One should observe that a different weighted  
21 average tax rate must be calculated for each "asset"  
22 vintage after a tax rate change.

DEFERRED TAX RETURN

REVERSALS AT WEIGHTED AVERAGE RATE

PLANT NUMBER 1 ACCOUNT NUMBER 1.00

VINTAGE -- 1ST YEAR IN SERVICE

TAX BASIS OF PLANT 100.000

YEAR	TAX	DEFERRED TAX	TAX	DEFERRED TAX	ACCUM-ULATED DEFERRALS	TAX DEFER	BOOK DEFER	REQUIRED RESERVE AVERAGE RATE	REH-ADJUST	ADJUST	DEFERRED TAXES	ADJ
1	0.0	0.0	0.500	2.125	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	6.250	2.000	0.500	2.125	43.750	48.000	2.125	2.125	0.0	0.0	2.125	2.125
3	11.719	4.000	0.250	1.930	82.031	94.000	2.992	0.0	0.0	0.0	1.930	4.055
4	10.573	4.000	0.250	1.643	71.458	90.000	4.635	0.0	0.0	0.0	1.643	5.698
5	9.844	4.000	0.250	1.461	7.159	86.000	6.096	0.0	0.0	0.0	1.461	7.159
6	9.115	4.000	0.250	1.279	8.437	82.000	7.375	0.0	0.0	0.0	1.279	8.437
7	8.385	4.000	0.250	1.096	9.534	78.000	8.471	0.0	0.0	0.0	1.096	9.534
8	7.656	4.000	0.250	0.914	10.448	74.000	9.385	0.0	0.0	0.0	0.914	10.448
9	6.927	4.000	0.250	0.732	11.180	70.000	10.117	0.0	0.0	0.0	0.732	11.180
10	6.198	4.000	0.250	0.549	11.729	66.000	10.667	0.0	0.0	0.0	0.549	11.729
11	5.469	4.000	0.250	0.367	12.096	62.000	11.034	0.0	0.0	0.0	0.367	12.096
12	4.740	4.000	0.250	0.185	12.281	58.000	11.219	0.0	0.0	0.0	0.185	12.281
13	4.010	4.000	0.250	0.003	12.284	54.000	11.221	0.0	0.0	0.0	0.003	12.284
14	3.281	4.000	0.250	-0.180	12.104	50.000	11.042	0.274	13	0.017	-0.197	12.087
15	2.552	4.000	0.250	-0.362	11.742	46.000	10.680	0.274	12	0.034	-0.396	11.691
16	1.823	4.000	0.250	-0.544	11.198	42.000	10.135	0.274	11	0.052	-0.596	11.095
17	1.094	4.000	0.250	-0.727	10.471	38.000	9.409	0.274	10	0.069	-0.795	10.300
18	0.365	4.000	0.250	-0.909	9.562	34.000	8.500	0.274	9	0.086	-0.995	9.305
19	0.0	4.000	0.250	-1.000	8.562	30.000	7.500	0.274	8	0.095	-1.095	8.210
20	0.0	4.000	0.250	-1.000	7.562	26.000	6.500	0.274	7	0.095	-1.095	7.115
21	0.0	4.000	0.250	-1.000	6.562	22.000	5.500	0.274	6	0.095	-1.095	6.021
22	0.0	4.000	0.250	-1.000	5.562	18.000	4.500	0.274	5	0.095	-1.095	4.926
23	0.0	4.000	0.250	-1.000	4.562	14.000	3.500	0.274	4	0.095	-1.095	3.831
24	0.0	4.000	0.250	-1.000	3.562	10.000	2.500	0.274	3	0.095	-1.095	2.737
25	0.0	4.000	0.250	-1.000	2.562	6.000	1.500	0.274	2	0.095	-1.095	1.642
26	0.0	4.000	0.250	-1.000	1.562	2.000	0.500	0.274	1	0.095	-0.547	0.547
27	0.0	2.000	0.250	-0.500	1.062	0.000	0.0	0.0	0	0.0	-0.547	-0.000
28	0.0	0.0	0.250	0.0	1.062	0.000	0.0	0.0	0	0.0	0.0	-0.000
29	0.0	0.0	0.250	0.0	1.062	0.000	0.0	0.0	0	0.0	0.0	-0.000
30	0.0	0.0	0.250	0.0	1.062	0.000	0.0	0.0	0	0.0	0.0	-0.000
31	0.0	0.0	0.250	0.0	1.062	0.000	0.0	0.0	0	0.0	0.0	-0.000
32	0.0	0.0	0.250	0.0	1.062	0.000	0.0	0.0	0	0.0	0.0	-0.000
33	0.0	0.0	0.250	0.0	1.062	0.000	0.0	0.0	0	0.0	0.0	-0.000
34	0.0	0.0	0.250	0.0	1.062	0.000	0.0	0.0	0	0.0	0.0	-0.000
35	0.0	0.0	0.250	0.0	1.062	0.000	0.0	0.0	0	0.0	0.0	-0.000
36	0.0	0.0	0.250	0.0	1.062	0.000	0.0	0.0	0	0.0	0.0	-0.000
37	0.0	0.0	0.250	0.0	1.062	0.000	0.0	0.0	0	0.0	0.0	-0.000
38	0.0	0.0	0.250	0.0	1.062	0.000	0.0	0.0	0	0.0	0.0	-0.000

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1. Q. Please discuss the "South Georgia" method of deferred taxes as proposed by the FERC.

A. Simply stated, the South Georgia method of putting a total shortfall or excess in the reserve for deferred taxes. In order No. 10, the taxes should be made up for the purpose of establishing a "deficiency" in accumulated taxes specifically, the method would establish taxes in the following manner:

(1) The book basis of property is compared to the tax basis in determining the total timing differences that exist at a computational date. The above amount is multiplied by the present statutory rate to derive the "required reserve".

(2) The difference between the actual deferred taxes and the "required reserve" is amortized over a specified time period.

(3) The difference between the actual deferred taxes and the "required reserve" is amortized over a specified time period.



1 18. Q. In your opinion, should the "South Georgia" method be  
2 adopted for purposes of Illinois ratemaking?  
3

4 A. No. Although the method correctly makes an adjustment  
5 to deferred taxes due to a tax rate change, it also  
6 attempts to establish a reserve for past flow-through.  
7 I show below that attempting to "remedy" past flow-  
8 through does not produce adequate results from either  
9 an accounting or a ratemaking standpoint.  
10

11 The problems with the South Georgia method can be  
12 highlighted by the simple example of a three year  
13 asset utilized in Exhibit AF-1 and summarized in the  
14 following table:  
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Table 2: Assumptions for "South Georgia" example

Year	1	2	3	4	Total
Gross Plant	300	300	300	300	-
Accum. Book Dep.	0	100	200	300	-
Accum. Tax Dep.	0	300	300	300	-
Net Book Basis	300	200	100	0	-
Net Tax Basis	300	0	0	0	-
Tax Exp: Flow-through	(200) <sup>a</sup>	100	100	0	0
Rev.: Flow-through	(100)	200	200	0	300
Tax Exp. Normalization	0	0	0	0	0
Rev. Normalization	100	100	100	0	300
Net Assets; Flow-through	300	200	100	0	
Net Assets Norm.	300	100	50	0	
(a) Rev.	(200)		(b) 200		
Tax Dep.	(300)		<u>0</u>		
Inc.	(400)		200		
Taxes	(200)		100		
Taxes + Dep. = -200 + 100 = <u>-100</u>			100 + 100 = 200		

I have established earlier (in Exhibit AF-1) that the asset pattern produced by normalization is theoretically correct and the smooth revenue requirements produced by normalization are optimal.

Under the South Georgia method, if a commission switches from flow through to normalization in year #2, the following occurs:

Year	1	2	3	4	Total
Net Book Basis	300	200	100	0	-
Net Tax Basis	300	0	0	0	-
Timing Difference	0	200	100	0	-
Theoretical Reserve	0	100	50	0	-
Current Deferred Taxes -Year #2 (Required-Actual)/Remaining Life	0	50	-	-	50
Accumulated Def. Taxes based on above	-	50	-	-	-
Adjusted Required Reserve Year #3 (50-50)	-	-	0	-	-
Deferred taxes Year #3 (Required-Actual)/Remaining Life	-	-	(50)	0	-
Revenue Requirement	(100)	300	100	0	300
Tax Expense	(200)	200	0	0	0

The revenue requirements under normalization, flow-through, and "South Georgia" can be summarized as follows:

<u>Year</u>	<u>Flow Through</u>	<u>Normalization</u>	<u>South Georgia</u>
1	(100)	100	(100)
2	200	100	300
3	200	100	100

\*Assumes switch from flow-through in year #2.

The simple example demonstrates clearly that revenue patterns produced by the South Georgia method in switching from flow-through to normalization produces more volatile revenues than either flow-through or normalization.

In terms of asset valuation net of deferred taxes, the South Georgia method produces the following results:

South Georgia Method

<u>Year</u>	<u>Net Book Value</u>	<u>Acc-Def. Taxes</u>	<u>Net Value</u>	<u>Flow-through</u>	<u>Normalization</u>
1	300	0	300	300	300
2	200	50	250	200	100
3	100	0	100	100	50
4	0	0	0	0	0

1           Thus, in terms of asset valuation, the South Georgia  
2           method produces inferior results to flow-through or  
3           normalization (See Exhibit AF-1 for further clarification).  
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ECONOMIC ISSUES

19. Q. Please discuss the purpose of this section of your testimony.

A. In this section of my testimony, I will attempt to use economic modeling to reaffirm some of my earlier conclusions and to examine the issue in a new framework. Questions of appropriate and efficient price signals through time and intergenerational equity issues\* will be given somewhat more weight in this section of my testimony.

20. Q. Please discuss the type of model you will utilize in this portion of your testimony.

A. At any point in time a utility company will have numerous assets of different vintages on its balance sheet. Hence isolating on a single asset in studying effects of various issues on the financial development of a firm over time can be misleading. In analyzing the issue of flow-through vs. normalization, dynamic "full cycle" models have proven to be the more appropriate analytical tool. The use of these continual growth models can yield equally beneficial results in evaluating the effects of an income tax rate change. In studies of interperiod tax allocation policies, the simulation models generally assume:

\*I define "generation" to include fairly short periods, for example a year or two.

- 1           -     Constant growth in sales which is equivalent to
- 2                     the growth rate in assets.
- 3           -     Constant costs of capital and growth rates.
- 4           -     No lead time in construction projects.
- 5           -     No operating expenses.

6

7           Obviously, the assumptions are hypothetical. In no way,

8           however, does this impede the value of the analysis. First

9           of all, the models are intended only to be analytical

10          devices; even though the assumptions are hypothetical, the

11          results can be very instructive in highlighting the dynamic

12          economic effects of alternate regulatory treatments. Secondly,

13          the effects of changing any of the assumptions can quite easily

14          be studied through sensitivity analysis.

15

16          Studies of flow-through vs. normalization have yielded the

17          following patterns of prices through time in these dynamic

18          models: Obviously the issue in this case is not flow-

19          through vs. normalization. However many of the economic

20          objectives in evaluating the issue of flow-through vs.

21          normalization are similar to the objectives in the

22          instant case. Thus examining the analysis of flow-through

23          vs. normalization provides a good starting point.

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16 The graphs assume that accelerated depreciation is first  
17 instituted in year number one and when the plant has  
18 completed a full life-cycle, a new "equilibrium" is reached.

19  
20 The graphs, of course, are affected by different assumed  
21 growth rates, costs of capital, capital structures, tax rates  
22 and other parameters. Sensitivity studies have in fact been  
23 performed studying many such issues.\* Whatever assumptions

24  
25 \*For example, the higher the growth rate, the lower the flow-through  
rates compared to normalization. See Donald W. Kiefer, "Accelerated  
Tax Depreciation and The Investment Tax Credit in The Public Utility  
Industry: A Background and Analysis." Also see Charles Stalton,  
"Some Economic Consequences of the Tax Act of 1981 on Capital Intensive  
Utilities".



FIGURE #1 PER UNIT CAPITAL COSTS OF FLOW-THROUGH VS. NORMALIZATION

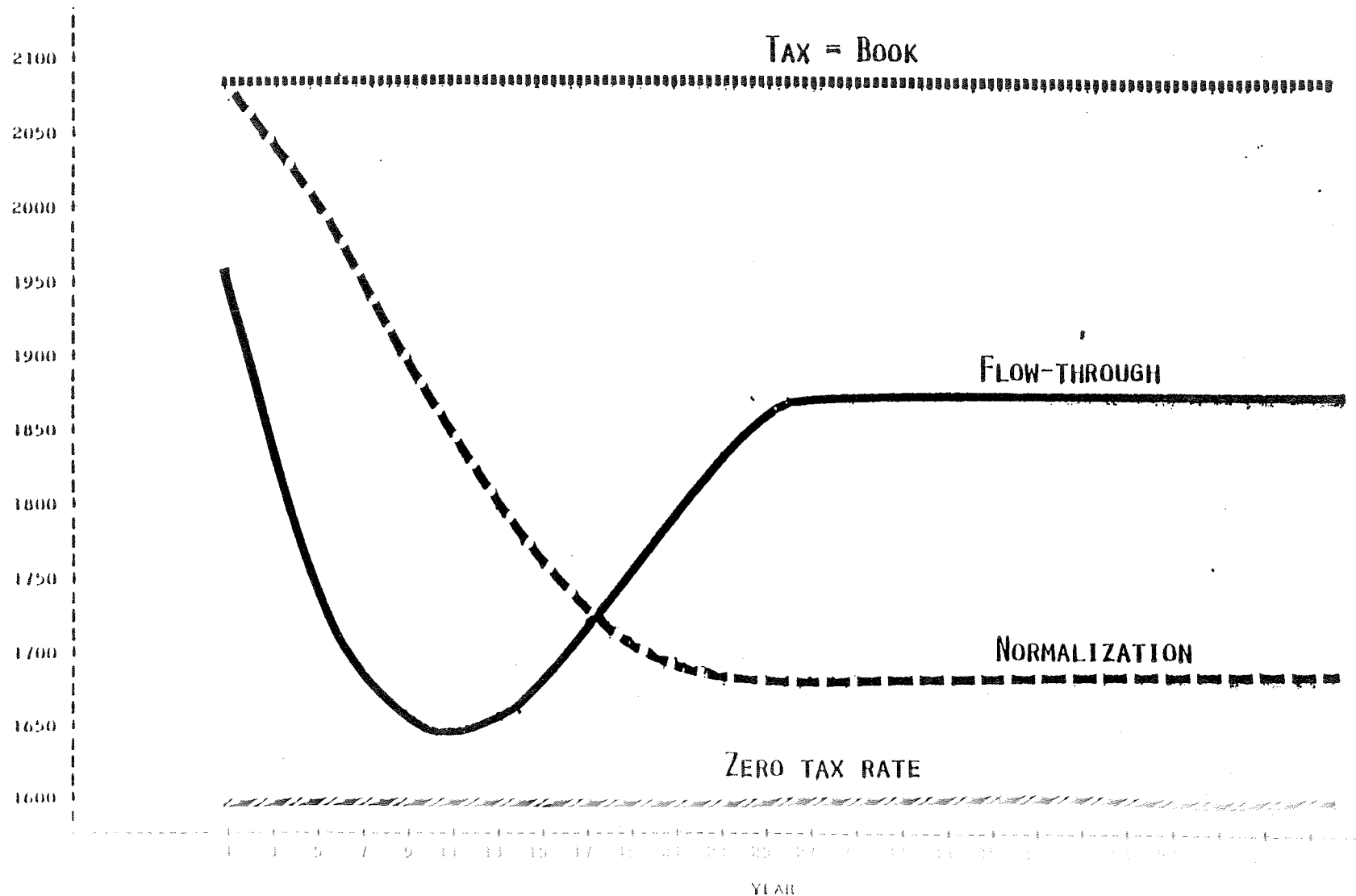


Figure #2

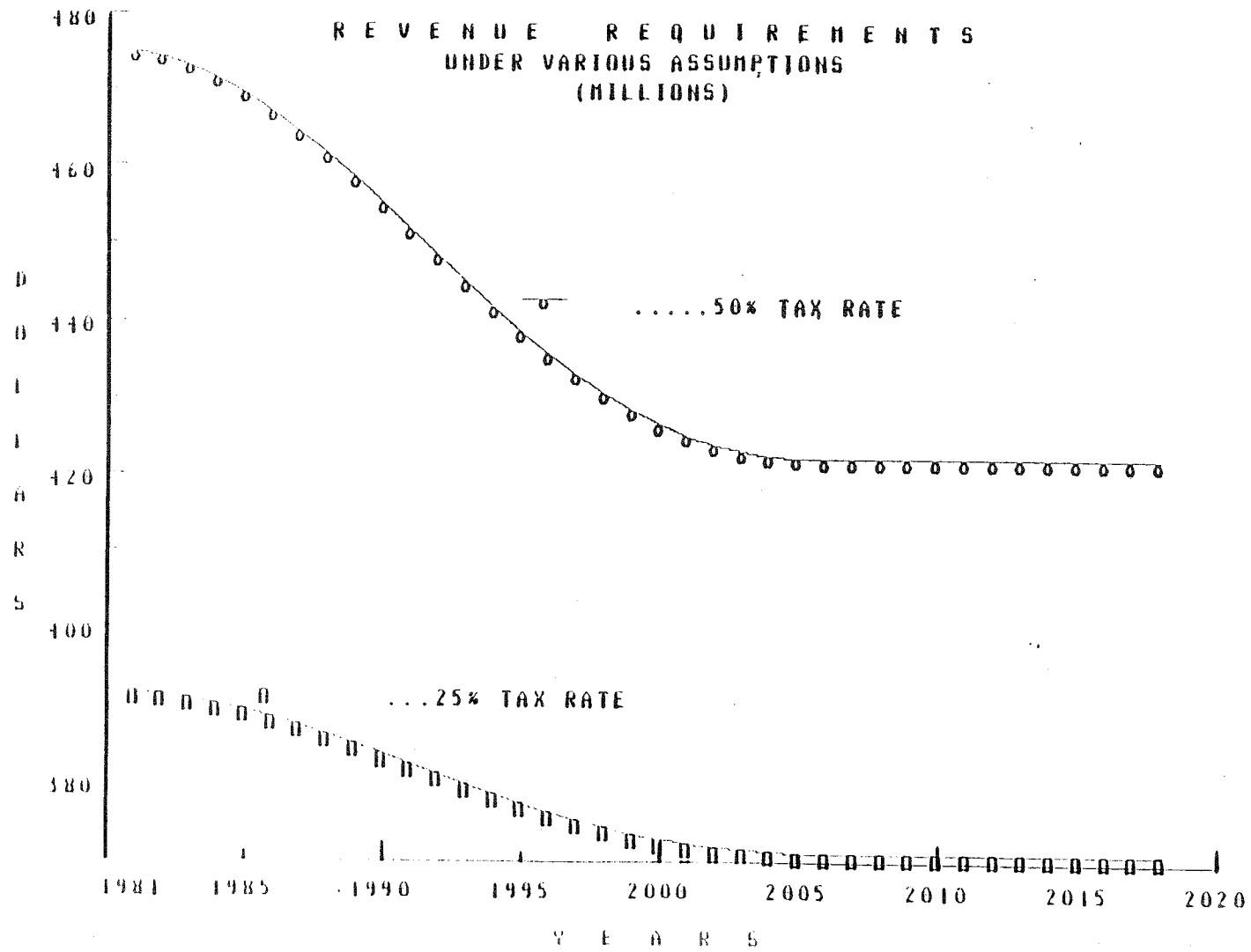


Figure #3

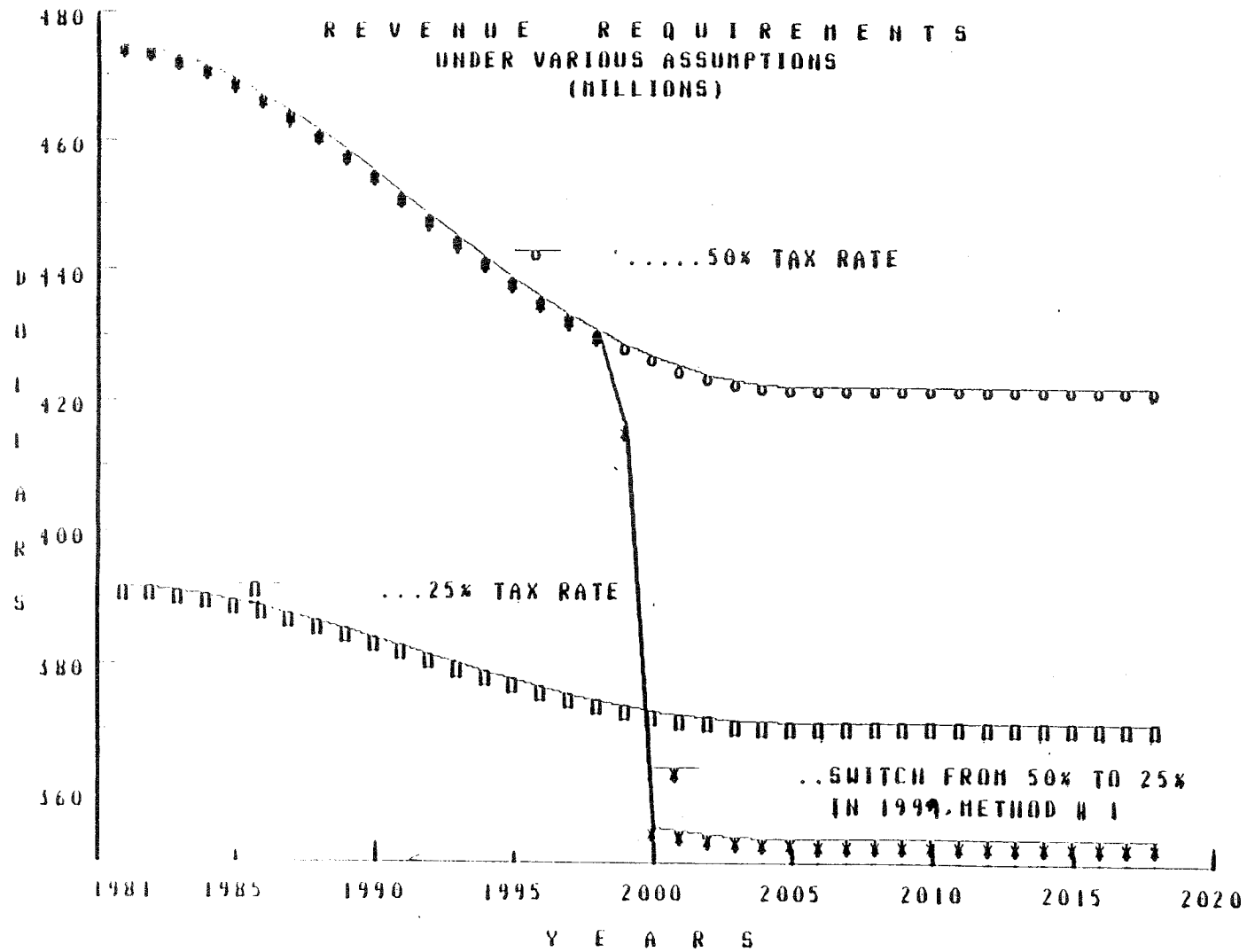


Figure #4

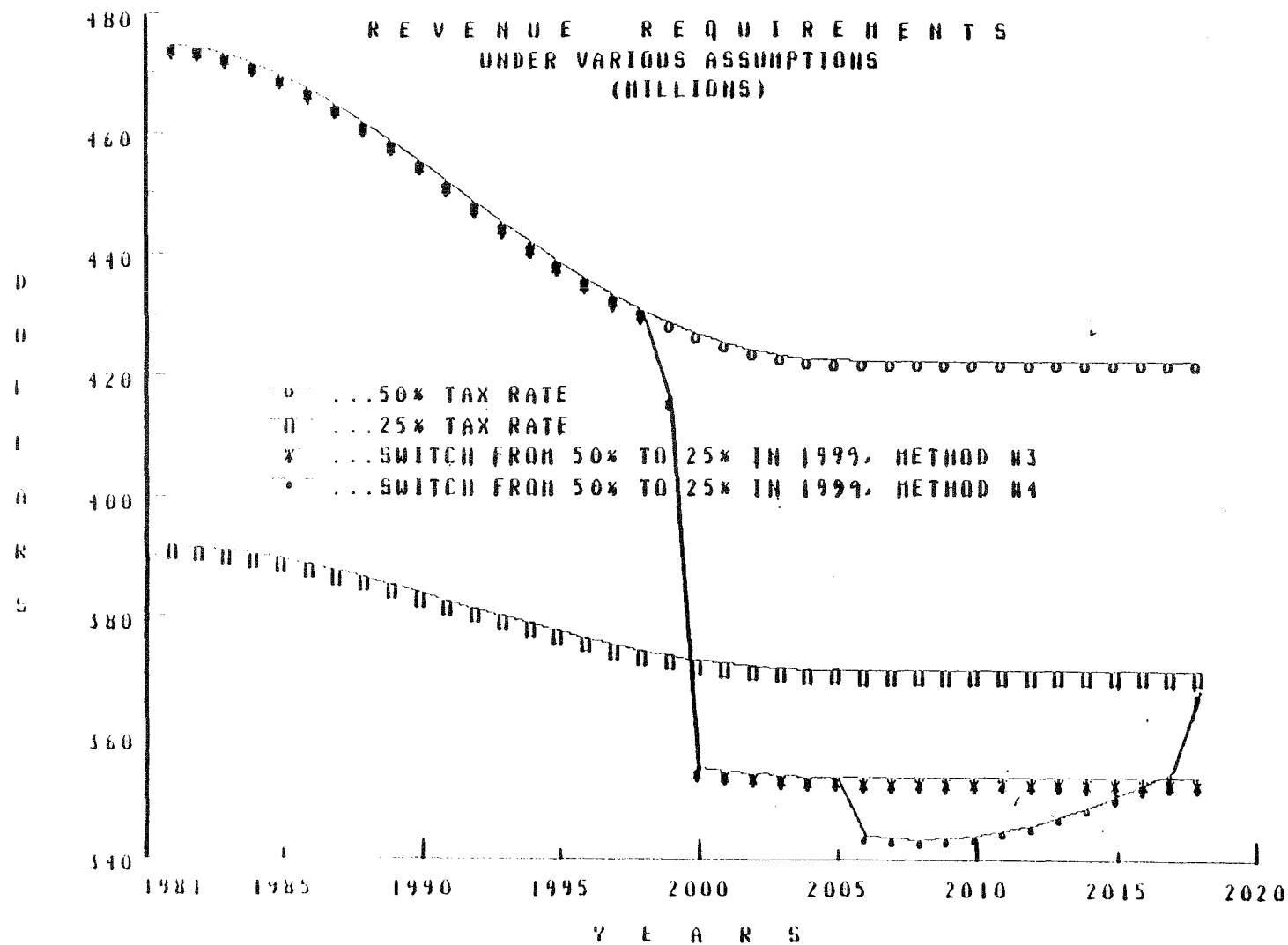
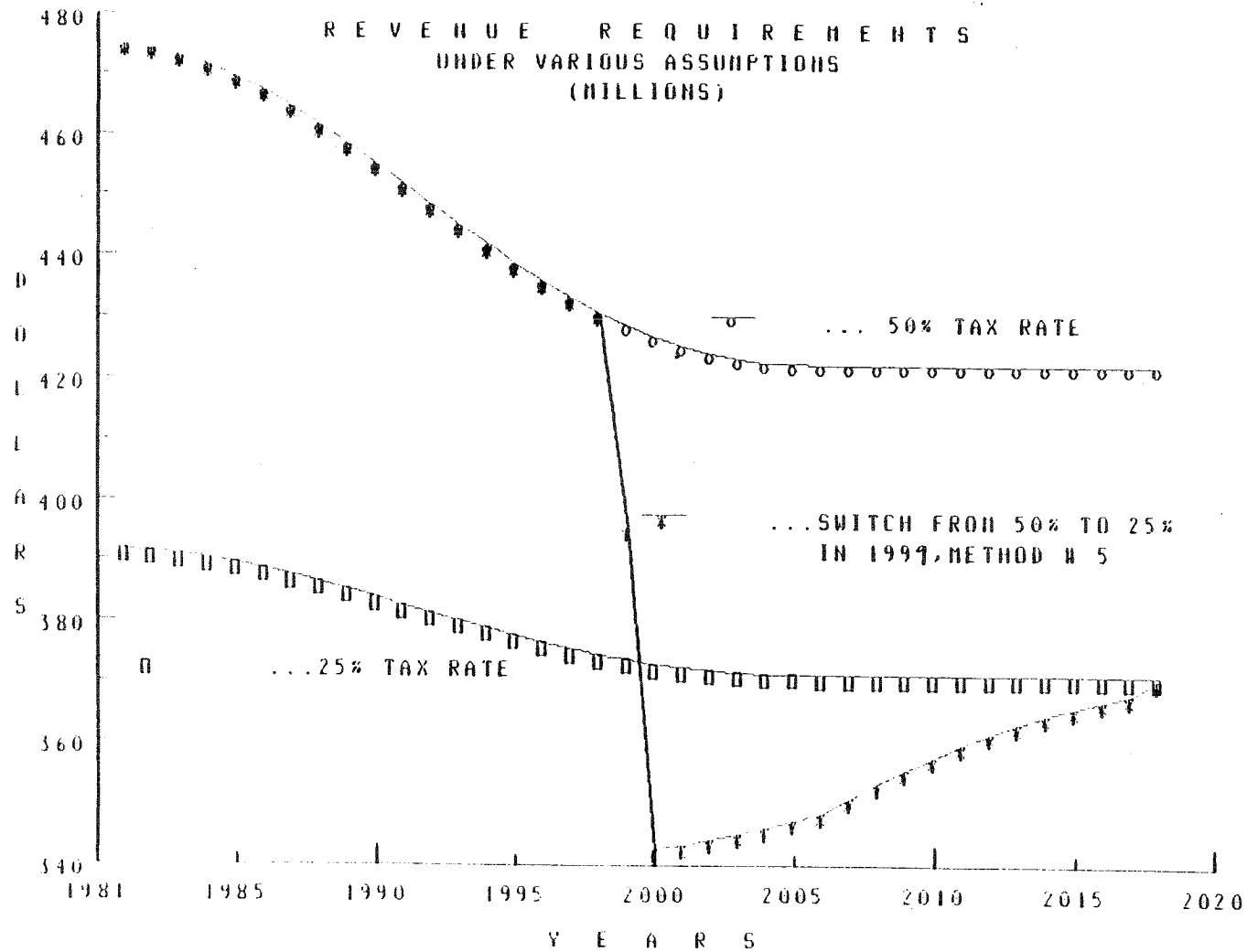


Figure #5



1 are used, however, an important result is convergence about  
2 an equilibrium price once the plants have gone through their  
3 "life cycle". Given assumptions of constant asset growth  
4 equivalent to sales growth this result is intuitively appeal-  
5 ing as well as mathematically correct; after all, if price  
6 did not converge, it would, by definition, eventually have to  
7 approach either positive or negative infinity.

8  
9 To study questions related to income tax rate changes, I  
10 will begin with a similar graph to the one labeled  
11 "normalization" on Figure #1.

12  
13 21. Q. Please describe some of the assumptions utilized in your  
14 models.

15  
16 A. First of all I have assumed a stable firm rather than a  
17 company whose assets are growing at some constant rate. In  
18 other words, for each year of the study, the additions to  
19 plant equal retirements of plant which equal the amount of  
20 book depreciation. The reason I can make this assumption  
21 is because in the case of a tax rate change, the question  
22 of deferrals never reversing due to constant growth is  
23 not relevant as a new tax rate will become fully established  
24 as the plant completes a "life-cycle".  
25

1 Secondly, I have assumed the income tax rate changes from  
2 50% to 25%. The reason I chose such a large change is  
3 to clearly exemplify the effects of the revision in income  
4 tax rates.

5  
6 22. Q. Please describe Figure #2.

7  
8 A. This graph demonstrates the patterns of revenues through  
9 time under both the assumption of a 25% income tax rate and  
10 a 50% income tax rate. Under the assumptions used, it can  
11 be theorized that these two graphs reflect prices that a  
12 purely competitive firm would charge in a constant cost  
13 industry. The regulatory question we must answer is how  
14 do prices move from the 50% tax rate graph to the 25%  
15 graph when the income tax rate changes.

1     23.   Q.    Please describe the implications of figure #3 which shows  
2                   the effects of making no adjustments to deferred taxes  
3                   subsequent to a change in income tax rates.

4  
5           A.    This figure demonstrates that if no adjustment is made to  
6                   accumulated deferred taxes, prices will never move to  
7                   the theoretically correct levels of a 25% tax rate.   Econ-  
8                   omists would argue that the "no adjustment" price path is  
9                   unjust and inefficient. Over the long-haul, the utility  
10                  service will be underpriced relative to other commodities  
11                  in this scenario and in the short-run the reaction to new  
12                  tax rates will not be as pronounced as the reaction of  
13                  competitive firms.

14  
15                The problems of intergenerational injustice from making no  
16                  adjustment to deferred taxes are also highlighted on Figure  
17                  #3. Even though the depreciation of the asset that created  
18                  the "excess" deferrals may have been expired for 20 years,  
19                  ratepayers still get the full rate base benefit of the de-  
20                  ferral. Finally, the graph demonstrates that even though  
21                  taxes may be matched properly to book expenses when no ad-  
22                  justment is made, this does not mean prices will be "correct"  
23                  due to rate base effects.



1 24. Q. Please describe the implications from Figure #4 which  
2 demonstrate the effects of adjusting deferrals in the  
3 period of retirement of the assets versus alternative  
4 #1 (no adjustment).

5  
6 A. The graph shows that when adjustments to accumulated  
7 deferred taxes are postponed until the retirement of an  
8 asset, problems of economic inefficiency and inter-  
9 generational injustice remain. In this case although  
10 prices eventually achieve their proper level, this does  
11 not occur until the plant has completed a full life  
12 cycle since the tax rate change. Additionally because  
13 of asset vintaging, it can be seen that the adjustment is  
14 not extremely sudden when it is made under this method.

15  
16 The shape of the graph can be explained as follows;  
17 originally prices conform to those which would exist  
18 under alternative #1. Later, as assets are retired,  
19 rates decline for a period. Finally as more assets  
20 are retired and the accumulated deferred taxes are  
21 removed from the books, rates approach the "theoretically  
22 appropriate" level. This adjustment path, however, carries  
23 no logic from either a practical or a theoretical standpoint.

1 25. Q. Please discuss figure #5 which simulates the adjustment  
2 process where "excess" deferred taxes are amortized over  
3 the remaining lives of the assets.  
4

5 A. The graph demonstrates that when this method is used,  
6 rates gradually approach their theoretically correct  
7 level by the end of a plant's life cycle. The adjustment  
8 process is gradual in that each year after a tax rate  
9 change prices move closer and closer to the economic  
10 levels. Thus the method has the advantage of smoothing  
11 rates as much as possible while eventually attaining  
12 "correct" price levels. As compared to method #2 which  
13 removes balances in deferred taxes upon retirement of  
14 the assets, this smooth adjustment process has more  
15 practical and theoretical justification. However, the  
16 method delays the adjustment to economic prices which of  
17 course offsets some of the benefits of the smooth adjust-  
18 ment path.  
19  
20  
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25

1 26. Q. Please discuss the implications from Figure #6 which  
2 compares methods number 3, 4 and 7, making the deferred  
3 tax adjustments over 1 year, 5 years, and over the  
4 remaining life of the assets.

5  
6 A. This graph demonstrates the problematic effects of method  
7 #3 which adjusts deferred taxes in one period subsequent  
8 to a tax rate change. Due to the cut in tax rates, revenues  
9 are only approximately 25% of what they were before the tax  
10 rate change in this scenario. In the following period how-  
11 ever, rates jump back up (a 400% increase) and attain the  
12 "theoretically correct" levels. Although the adjustment  
13 process in this scenario allows rates to reach correct  
14 levels very rapidly, the sharp jumps in revenues provide  
15 neither fair nor efficient price signals to ratepayers.

16  
17 It is finally worth noting that when asset vintaging is  
18 introduced, this "front-ending" method produces far more  
19 jagged rates than "back-ended" methods which adjust  
20 deferrals upon retirement of the assets.

21  
22 When amortization periods which are inbetween the remaining  
23 life and one year are utilized the trade-off between a  
24 smooth adjustment path and a rapid period of adjustment  
25 become readily apparent. In the 5 year amortization case

rates reach economic levels after 5 years and the adjustment path is about 5 times less dramatic than the one year scenario.

1 27. Q. Please describe Figure #7 which  
2 versing deferrals at a weighted

3  
4 A. The figure demonstrates that when  
5 this method produces rates which  
6 after a period of relatively stable  
7 the "theoretically correct" level  
8 which amortizes deferred taxes over  
9 assets, this method delays the adjustment  
10 "correct" levels. It can be seen  
11 similar results to amortization over  
12 when asset vintaging is considered.

13  
14 28. Q. Please discuss financial impacts of

15  
16 A. The effects on before tax interest coverage  
17 summarized in the following table:

18 Before tax  
19 ing tax  
20 25% "correct" level  
21 Method 1 -- No adjustment  
22 Method 2 -- Adjust @ retirement  
23 Method 3 -- Adjust in one period  
24 Method 4 -- Adjust over remaining life  
25 Method 5 -- Adjust over 5 years  
Method 6 -- Use weighted avg. rate

1           These effects are due to the add back of income taxes  
2           in the computation of the coverage ratio as well as the  
3           cash flow impacts of the various options.  
4

5       29.   Q.   Do you have any other comments regarding the economics  
6           of the issue of how to deal with a change in statutory  
7           income tax rates?  
8

9           A.   Yes.   The issue obviously has direct effects on the amount  
10          of accumulated deferred taxes a utility records on its  
11          balance sheet.  Because of the differences in cash flow the  
12          change in deferred taxes also impacts the ratio of deferred  
13          taxes to nominal capital.  The slower the "excess" deferred  
14          taxes are amortized, the greater the percentage of deferred  
15          taxes on the balance sheet.  More importantly, the percentage  
16          of deferred taxes on the balance sheet has direct effects on  
17          the ratio of unamortized investment tax credits to a utility's  
18          nominal capital.  The greater the level of deferred taxes,  
19          the lower the relative level of nominal capital and the  
20          greater the unamortized investment tax credits are as a  
21          percentage of nominal capital.  
22

23          Because the percentage of investment tax credit affects  
24          the relationship between a utility's allowed and earned  
25          return, the company obviously has an incentive to maximize

the percentage of unamortized investment tax credits (and correspondingly the percentage of deferred taxes) on its balance sheet. The relationship can be expressed as follows:

$$\text{Actual ROE} = \text{Allowed ROE} + \text{Return on Rate Base} \times \frac{(\text{Unamortized ITC})}{(\text{Book Equity})}$$

Exhibits AF 3-9 use the theoretical model with a change in the tax rate from 50% to 25% to develop the various ratios of deferred taxes to nominal capital. The exhibit shows that if no adjustment is made to deferred taxes subsequent to a tax rate change, deferred taxes stabilize at 15.08% whereas if an adjustment is made, deferred taxes stabilize at 7.58% of nominal capital. If I assume a 100% equity financed company this has the following effects:

<u>No Adjustment</u>		<u>Adjustment For Tax Rate Change</u>	
Gross Assets	100	Gross Assets	100
Deferred Taxes	11.8	Deferred taxes	6.34
ITC	<u>10</u>	ITC	<u>10</u>
Equity	78.2	Equity	83.66
Allowed ROE =	15%	Allowed ROE	15%
Earned ROE	$\frac{.15(100-11.8)}{78.2}$	Earned ROE	$\frac{.15(100-6.34)}{83.66}$
=	16.92%	=	16.79%

1                   Effects of The Federal Tax Law .

2  
3   30.   Q.    Please discuss the effects of adjusting deferred taxes  
4           for a tax rate change on the deductibility of expenses  
5           for tax purposes.

6  
7       A.    The risk of a utility company losing accelerated deprecia-  
8           tion due to making an adjustment to deferred taxes for a  
9           change in tax rates does not appear to be a very realistic  
10          one.   I make this statement for the following reasons:  
11          (1)   Many utility companies have been making adjustments for  
12               a number of years with no adverse consequences.

13  
14  
15          (2)   In a recent IRS ruling, the IRS stated:

16  
17           The income tax expense for ratemaking purposes is  
18           computed without giving effect to the accelerated  
19           method of depreciation the taxpayer has elected to  
20           use for tax purposes. The difference between the  
21           tax expense used for ratemaking purposes and the  
22           actual tax is credited to a reserve for deferred  
23           taxes or a deferred surplus account. In later years,  
24           when the actual tax exceeds the tax expense used for  
25           ratemaking purposes the difference is charged to the  
26           reserve for deferred taxes or deferred surplus account  
27           so that at the end of the useful life of the property  
28           that gave rise to the account it will be reduced to  
29           zero. Thus, normalization results in the federal in-  
30           come tax expense for a given period reflecting the full  
31           tax attributable to the income for that period.  
32           (emphasis added)



1 If the income tax rate changed, a balance in deferred  
2 taxes of zero would of course not be possible unless an  
3 adjustment is made to deferred taxes.

4  
5 (3) The IRS has allowed in a letter ruling the South Georgia  
6 method which which among other things amortizes deferrals  
7 over the remaining life of plant.

8  
9 31. Q. Have there been any recent developments with respect to  
10 the IRS' treatment of this issue?

11  
12 A. Yes. Recently a commission ordered a company to:

13  
14 (1) Amortize "excess" deferred taxes over a two  
15 year period; and

16  
17 (2) Use the old federal income tax rate instead  
18 of the new income tax rate to expand the  
19 adjustment for federal income taxes in order  
20 to determine revenue requirements. (this is  
21 explained below)

22  
23 The IRS stated:  
24  
25

1 The staff's method, on which Order # is based,  
2 consists of two parts as previously described. No  
3 opinion is expressed with respect to the first part of  
4 the order. The following ruling is given with respect  
5 to the second part of the order:

6 The refund of to taxpayer's customers  
7 representing the difference in revenues associated  
8 with the amounts in the deferred tax account that  
9 were credited to the account when the tax rate was  
10 48% and the revenue associated with the amounts to  
11 be charged to the deferred tax at the present rate  
12 of 46% will not be consistent with the normalization  
13 requirements of section 167(l)-1(h) and 1.167(a)-  
14 11(b)(6) of the regulations, if the refund results  
15 in an adjustment to the tax expense used in establish-  
16 ing cost of service for ratemaking purposes or an  
17 adjustment to a reserve for deferred taxes, deferred  
18 surplus or any other account that produces an equiva-  
19 lent result. (emphasis added)

20 What the IRS did not allow is demonstrated by the following  
21 example used in the letter ruling:

22 Book/tax timing difference:	\$200
23 Deferred taxes @ 48% rate	\$ 96
24 Deferred taxes @ 46% rate	<u>92</u>
25 Difference	\$ 4

26 Revenue Requirements when deferred taxes originate @  
27 48% rate:

$$28 \quad 96 / (1 - .48) = \$184.61$$

29 The public utility commission wanted to "refund  
30 \$184.61 instead of

$$31 \quad 96 / (1 - .46) = \$177.78$$

1 which would be reflected by a gross up factor using the  
2 current tax rates.

3  
4 Nowhere in my testimony do I suggest that such an adjust-  
5 ment should be made.

6  
7 Conclusions  
8

9 32. Q. Given the current status of Federal tax regulations,  
10 what are your conclusions regarding the issue of  
11 adjusting deferred taxes due to a tax rate change?

12  
13 A. Given the current regulations, I conclude that the risk  
14 of accelerating amortization of "excess" deferred taxes  
15 over a time period faster than the average remaining  
16 life of a company's assets outweigh any possible bene-  
17 fits in terms of regulatory objectives. Thus, I recom-  
18 mend that utilities either use the remaining life or the  
19 weighted average method. However, if the tax law is  
20 changed to allow any method for reversing deferred taxes  
21 the Commission must balance the trade offs between:

22  
23  
24 (1) Achieving "economic" rates and correct asset valua-  
25 tion as quickly as possible.

26 (2) Achieving "stable" rates through time.

1 My testimony makes obvious that adjusting deferrals over  
2 the remaining life emphasizes objective #2 over objec-  
3 tive #1.  
4

5  
6 Finally, I would like to emphasize that the issue in-  
7 volves the credibility of normalized accounting for book/  
8 tax timing differences. I cannot envision an IRS ruling  
9 which goes against the basic principles of normalization  
10 which prompted the tax law in the first place. When  
11 states such as New York, California, and Iowa have been  
12 making adjustments to deferred taxes due to the income tax  
13 rate change in 1979 since soon after the date it was in-  
14 stituted, we must not be afraid of those who prophesize  
15 loss of all tax depreciation if logical normalization is  
16 adopted. In fact, many utilities in the State of Illinois  
17 have adopted methods which adjust deferred taxes for  
18 changes in federal statutory rates. These companies have  
19 not lost any tax benefits.  
20  
21

22 33. Q. Do you have any final comments regarding the issue of tax  
23 rate changes?  
24

25 A. Yes, my testimony is not limited to the federal income tax  
26 rate change in 1979. In fact Exhibit AF-9 shows that the

1 federal income tax rate has changed on numerous occa-  
2 sions since 1954. It is my recommendation that the  
3 utility companies involved in this proceeding should sub-  
4 mit reports detailing the dollar amount of excess deferred  
5 taxes due to all changes in income tax rates since the  
6 adoption of normalization.

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1 Value of Plant =  $\Sigma$  before tax cash inflow  $(1-\tau)$  +  $\Sigma$  tax deductions  $\times \tau$

2

3 Furthermore, if the total value of the plant can be used as a tax  
4 deduction than (because we ignore the cost of money):

5

6 Value of Plant =  $\Sigma$  before tax cash inflows  $(1 - \tau)$  + value of plant  $\times \tau$

7

8 substituting;

9

10 Value of Plant  $(1 - \tau) = \Sigma$  before tax inflows  $(1 - \tau)$

11 or

12

Value of Plant =  $\Sigma$  before tax inflows.

13

14

15

If, on the other hand, there are no tax deductions associated  
with a plant, then:

16

17

Value of plant =  $\Sigma$  before tax cash flow  $(1 - \tau)$

18

19

20

21

22

23

24

25

In terms of this simple formula, the asset with no tax depreciation is worth less than the value of the plant which has tax depreciation by a factor of one minus the tax rate. A simple example further illustrates the value of tax depreciation: Assume two assets have cash inflows (which equals book depreciation) of \$100 for 3 years, and further assume a tax rate of 50% and no cost of money. The only

difference between the assets is that Asset #1 can utilize all tax depreciation in the first year of its operation and Asset #2 carries no associated tax depreciation. In this case the cash flows and expenses can be expressed as follows:

	<u>Value = 300</u> Asset #1				<u>Value = 300(1-t)=150</u> Asset #2			
Period	1	2	3	<u>Total</u>	1	2	3	<u>Total</u>
Revenues = Cash Inflow	100	100	100	300	100	100	100	300
Tax Deductions (300)		0	0	(300)	0	0	0	0
Paid Taxes @ 50%	(100)	50	50	0	50	50	50	150
Net Cash Flow	200	50	50	<u>300</u>	50	50	50	<u>150</u>

Thus, Asset #2 is worth only half as much as asset number one due to the lack of tax depreciation. I will now demonstrate that accumulated deferred taxes will correctly measure the value of an asset in midstream of its life if there are no income tax changes. To do this we change our plant value formulas to the following:

$$\text{Value of Plant}_t = \text{\$ after remaining tax inflows} + \text{\$ remaining reductions in tax outflows}$$



or

Value of Plant<sub>t</sub> = £ remaining before tax (1-τ) + £ remaining deductions x τ.

I now illustrate these formulas and the accounting for deferred taxes by again assuming Asset #1 where the assets produces \$100 before tax cash flows per year and has a tax deduction of \$300 in year 1. Asset #2 however is now assumed to carry a tax deduction of \$300 in year 3. In this example both assets are originally valued at their before tax cash flow of \$300. Through time however, their value changes as follows:

	<u>Asset #1</u>				<u>Asset #2</u>			
Design of Year	1	2	3	4	1	2	3	4
Remaining Cash inflows	300	200	100	0	300	200	100	0
Cash inflows x τ	150	100	50	0	150	100	50	0
Remaining tax deduction value	<u>150</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>150</u>	<u>150</u>	<u>150</u>	<u>0</u>
	300	100	50	0	300	250	200	0

These are exactly the net asset values that are produced by normalized accounting:

	<u>Asset #1</u>				<u>Asset #2</u>			
Year	1	2	3	4	1	2	3	4
Gross Plant	300	300	300	300	300	300	300	300
Acc dep <sup>1</sup>	0	100	200	300	0	100	200	300
Acc deferral	<u>0</u>	<u>100(a)</u>	<u>50(b)</u>	<u>0</u>	<u>0</u>	<u>-50(c)</u>	<u>-100(d)</u>	<u>0(e)</u>
Book Value	300	100	50	0	300	250	200	0

(1) Straight Line Depreciation over 3 years which matches before tax cash inflow

(a)  $(300-100) \times .50$

(b)  $(000-100) \times .50 + 100$

(c)  $(00-100) \times .50$

(d)  $-50 + (00-100) \times .50$

(e)  $(300-100) \times .5 - 100$

With this theory, I can evaluate the effects on asset valuation of a sudden change in income tax rates. From the earlier analysis, it becomes obvious that the value of an asset changes for two reasons when the income tax changes:

(1) The value of the after tax cash inflows change

(2) The value of the tax depreciation changes.

The question now is whether any method for computing deferred taxes can correctly measure these changes in the value of assets due to a tax rate change. To analyze this problem I will use the same example as I employed earlier where:

Year	1	2	3
Before tax cash flows (both assets)	100	100	100
Tax Depreciation Asset #1	300	0	0
Tax Depreciation Asset #2	0	0	300

If the tax rate is 50% and it does not change, we discovered earlier that the value of Asset #1 is at the beginning of each year 300, 100 and 50 respectively and asset #2 is 300, 250, and 200 for the three years. Furthermore, normalized accounting correctly gives these results. Now I will assume that the corporate income tax is abolished at the end of year 2\* (beginning of year 3) and evaluate what happens to the value of these assets through time. To do this we go back to the formula where:

Value of plant =  $\Sigma$  remaining before tax cash flows  $(1 - \tau)$  +  $\Sigma$  remaining tax dep  $\times \tau$ .

Now we have:

Asset #1		(Beginning of year)			
		1	2	3	4
(1)	Before tax cash flow remaining	300	200	100	0
(2)	Income Tax Rate	.5	.5	0	0
(3)	Before tax flows $(1-\tau)$	150	100	100	0
(4)	Remaining tax depreciation	300	0	0	0
(5)	Remaining tax depreciation $\times \tau$	<u>150</u>	<u>0</u>	<u>0</u>	<u>0</u>
	Total Asset Value $(3+5)$	300	100	100	0

\*This is only used for the example and is not intended to reflect either realistic possibilities or opinions of the staff.

To further simplify, I will define the "deferred" method as making no adjustment to the deferred tax reserve for tax rate changes and the "liability" method as adjusting the deferred tax reserve immediately to reflect any new tax rate.

Under the deferred method the credits reducing the accumulated deferred tax account are made at the current income tax rate (zero after year 2) and thus the accumulated deferred tax account retains a 100 balance in year 4.

#### Asset #1 Deferred Method

Beginning of Year	1	2	3	4
Gross Plant	300	300	300	300
Accumulated depreciation	0	100	200	300
Accumulated deferrals	<u>0</u>	<u>100</u>	<u>100</u>	<u>100</u>
Asset Value Under Deferred Method	300	100	0	-100
Correct Asset Value Understate-				
ment of asset value	<u>300</u>	<u>100</u>	<u>100</u>	<u>0</u>
	0	0	100	100

It thus becomes obvious that the deferred method understates the net cost of the asset after the tax rate has changed.

Under the liability method for my expository purposes, I assume that the deferred tax reserve is fully adjusted in the period of the tax change (Year #3 in our example):

1	Asset #1	Liability Method			
2	Beginning of Year	1	2	3	4
3	Gross Plant	300	300	300	300
4	Accumulated Depreciation	0	100	200	300
5	Accumulated Deferrals	<u>0</u>	<u>100</u>	<u>0</u>	<u>0</u>
6	Asset Value under the	300	100	100	0
7	"liability" method				

8

9 It is apparent that the liability method correctly measures

10 the value of the asset whereas the deferred method significantly

11 understates the value of the asset.

12

13 Turning to Asset #2 where the tax depreciation does not

14 occur until year 3, the theoretical value of the asset would be:

16	Beginning of Year	1	2	3	4
17	(1) Remaining Before Tax Cash Flows	300	200	100	0
18	(2) Income Tax Rate	.5	.5	0	0
19	(3) Before Tax Cash Flows $(1-\tau)$	150	100	100	0
20	(4) Remaining tax depreciation	300	300	300	0
21	(5) Remaining tax depreciation $\times \tau$	<u>150</u>	<u>150</u>	<u>0</u>	<u>0</u>
22	Asset Value (3+5)	300	250	100	0

23 Evaluating the effects of the liability method as compared

24 to the deferred method, we again find that the liability

25 method correctly states the cost of the asset whereas the

26 deferred method now overstates the net asset value.

1 The deferred and liability methods produce the following results:

2  
3 Deferred

4

5 Beginning of Year	1	2	3	4
6 Gross Plant	300	300	300	300
7 Accumulated Depreciation	0	100	200	300
8 Accumulated Deferrals	<u>0</u>	<u>-50</u>	<u>-100</u>	<u>-100</u>
9 Asset Value (Deferred)	300	250	200	100
10 Correct Value	<u>300</u>	<u>250</u>	<u>100</u>	<u>0</u>
11 Overstatement	0	0	100	100

12

13 Once again, the negative 50 deferral in year 2 results from  
14 the excess of book over tax depreciation and the remaining  
15 negative 100 in years 3 and 4 results from computing no  
16 reversals because of tax rate of zero.

17  
18 Liability

19

20 Beginning of year	1	2	3	4
21 Gross Plant	300	300	300	300
22 Accumulated Depreciation	0	100	200	300
23 Accumulated Deferrals	<u>0</u>	<u>-50</u>	<u>- 0</u>	<u>0</u>
24 Asset Value	300	250	100	0

25

1 In years 3 and 4, the liability method correctly states the  
2 value of the asset whereas the deferred method produces an  
3 "excess" of 100.  
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## Exhibit AF-2

No Adjustment For Tax Rate Changes

Page 1 of 5

## DEFERRED TAX REPORT

## NO ADJUSTMENT FOR TAX RATE CHANGES

PLANT NUMBER	1	ACCOUNT NUMBER	1.00										
VINTAGE -- 1ST YEAR IN SERVICE				2									
TAX BASIS OF PLANT				100.000									
YEAR	TAX DEPREC- IATION	BOOK DEPREC- IATION	TAX RATE	DEFERRED TAXES CURRENT	ACCUM- ULATED DEFERRALS	TAX DEPR LEFT	BOOK DEPR LEFT	REQUIRED RESERVE	EXCESS DEFERRED TAXES	REM- AINING LIFE	ADJUST- MENT	ADJUSTED DEFERRED TAXES	ADJ- USTED RESERVE
1	0.0	0.0	0.500	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0
2	6.250	2.000	0.500	2.125	2.125	43.750	48.000	2.125	0.0	25	0.0	2.125	2.125
3	11.719	4.000	0.500	3.859	5.984	82.031	94.000	5.984	0.0	24	0.0	3.859	5.984
4	10.573	4.000	0.500	3.286	9.271	71.458	90.000	9.271	-0.000	23	0.0	3.286	9.271
5	9.844	4.000	0.500	2.922	12.193	61.615	86.000	12.193	-0.000	22	0.0	2.922	12.193
6	9.115	4.000	0.500	2.557	14.750	52.500	82.000	14.750	-0.000	21	0.0	2.557	14.750
7	8.385	4.000	0.500	2.193	16.943	44.115	78.000	16.943	0.0	20	0.0	2.193	16.943
8	7.656	4.000	0.500	1.828	18.771	36.458	74.000	18.771	0.0	19	0.0	1.828	18.771
9	6.927	4.000	0.500	1.464	20.234	29.531	70.000	20.234	0.000	18	0.0	1.464	20.234
10	6.198	4.000	0.500	1.099	21.333	23.333	66.000	21.333	0.000	17	0.0	1.099	21.333
11	5.469	4.000	0.500	0.734	22.068	17.865	62.000	22.068	0.000	16	0.0	0.734	22.068
12	4.740	4.000	0.500	0.370	22.437	13.125	58.000	22.437	0.000	15	0.0	0.370	22.437
13	4.010	4.000	0.500	0.005	22.443	9.115	54.000	22.443	0.000	14	0.0	0.005	22.443
14	3.281	4.000	0.500	-0.359	22.083	5.833	50.000	22.083	0.000	13	0.0	-0.359	22.083
15	2.552	4.000	0.500	-0.724	21.359	3.281	46.000	21.359	0.000	12	0.0	-0.724	21.359
16	1.823	4.000	0.500	-1.089	20.271	1.458	42.000	20.271	0.000	11	0.0	-1.089	20.271
17	1.094	4.000	0.500	-1.453	18.818	0.365	38.000	18.818	0.000	10	0.0	-1.453	18.818
18	0.365	4.000	0.500	-1.818	17.000	0.000	34.000	17.000	0.000	9	0.0	-1.818	17.000
19	0.0	4.000	0.500	-2.000	15.000	0.000	30.000	15.000	0.000	8	0.0	-2.000	15.000
20	0.0	4.000	0.250	-1.000	14.000	0.000	26.000	6.500	-7.500	7	0.0	-1.000	14.000
21	0.0	4.000	0.250	-1.000	13.000	0.000	22.000	5.500	-7.500	6	0.0	-1.000	13.000
22	0.0	4.000	0.250	-1.000	12.000	0.000	18.000	4.500	-7.500	5	0.0	-1.000	12.000
23	0.0	4.000	0.250	-1.000	11.000	0.000	14.000	3.500	-7.500	4	0.0	-1.000	11.000
24	0.0	4.000	0.250	-1.000	10.000	0.000	10.000	2.500	-7.500	3	0.0	-1.000	10.000
25	0.0	4.000	0.250	-1.000	9.000	0.000	6.000	1.500	-7.500	2	0.0	-1.000	9.000
26	0.0	4.000	0.250	-1.000	8.000	0.000	2.000	0.500	-7.500	1	0.0	-1.000	8.000
27	0.0	2.000	0.250	-0.500	7.500	0.000	0.0	-0.000	-7.500	0	0.0	-0.500	7.500
28	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	-7.500	0	0.0	0.0	7.500
29	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	-7.500	0	0.0	0.0	7.500
30	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	-7.500	0	0.0	0.0	7.500
31	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	-7.500	0	0.0	0.0	7.500
32	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	-7.500	0	0.0	0.0	7.500
33	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	-7.500	0	0.0	0.0	7.500
34	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	-7.500	0	0.0	0.0	7.500
35	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	-7.500	0	0.0	0.0	7.500
36	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	-7.500	0	0.0	0.0	7.500
37	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	-7.500	0	0.0	0.0	7.500
38	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	-7.500	0	0.0	0.0	7.500



## Exhibit AF-2

Page 3 of 5

## DEFERRED TAX REPORT

## NO ADJUSTMENT FOR TAX RATE CHANGES

PLANT NUMBER 1 ACCOUNT NUMBER 1.00

VINIAGE -- 1ST YEAR IN SERVICE  
TAX BASIS OF PLANT4  
100.000

YEAR	TAX DEPREC- IATION	BOOK DEPREC- IATION	TAX RATE	DEFERRED TAXES CURRENT	ACCUM- ULATED DEFERRALS	TAX DEPR LEFT	BOOK DEPR LEFT	REQUIRED RESERVE	EXCESS DEFERRED TAXES	REM- AINING LIFE	ADJUST- MENT	ADJUSTED DEFERRED TAXES	ADJ- USTED RESERVE
1	0.0	0.0	0.500	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0
2	0.0	0.0	0.500	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0
3	0.0	0.0	0.500	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0
4	6.250	2.000	0.500	2.125	2.125	43.750	48.000	2.125	0.0	25	0.0	2.125	2.125
5	11.719	4.000	0.500	3.859	5.984	82.031	94.000	5.984	0.0	24	0.0	3.859	5.984
6	10.573	4.000	0.500	3.286	9.271	71.458	90.000	9.271	-0.000	23	0.0	3.286	9.271
7	9.844	4.000	0.500	2.922	12.193	61.615	86.000	12.193	-0.000	22	0.0	2.922	12.193
8	9.115	4.000	0.500	2.557	14.750	52.500	82.000	14.750	-0.000	21	0.0	2.557	14.750
9	8.385	4.000	0.500	2.193	16.943	44.115	78.000	16.943	0.0	20	0.0	2.193	16.943
10	7.656	4.000	0.500	1.828	18.771	36.458	74.000	18.771	0.0	19	0.0	1.828	18.771
11	6.927	4.000	0.500	1.464	20.234	29.531	70.000	20.234	0.000	18	0.0	1.464	20.234
12	6.198	4.000	0.500	1.099	21.333	23.333	66.000	21.333	0.000	17	0.0	1.099	21.333
13	5.469	4.000	0.500	0.734	22.068	17.865	62.000	22.068	0.000	16	0.0	0.734	22.068
14	4.740	4.000	0.500	0.370	22.437	13.125	58.000	22.437	0.000	15	0.0	0.370	22.437
15	4.010	4.000	0.500	0.005	22.443	9.115	54.000	22.443	0.000	14	0.0	0.005	22.443
16	3.281	4.000	0.500	-0.359	22.083	5.833	50.000	22.083	0.000	13	0.0	-0.359	22.083
17	2.552	4.000	0.500	-0.724	21.359	3.281	46.000	21.359	0.000	12	0.0	-0.724	21.359
18	1.823	4.000	0.500	-1.089	20.271	1.458	42.000	20.271	0.000	11	0.0	-1.089	20.271
19	1.094	4.000	0.500	-1.453	18.818	0.365	38.000	18.818	0.000	10	0.0	-1.453	18.818
20	0.365	4.000	0.250	-0.909	17.909	0.000	34.000	8.500	-9.409	9	0.0	-0.909	17.909
21	0.0	4.000	0.250	-1.000	16.909	0.000	30.000	7.500	-9.409	8	0.0	-1.000	16.909
22	0.0	4.000	0.250	-1.000	15.909	0.000	26.000	6.500	-9.409	7	0.0	-1.000	15.909
23	0.0	4.000	0.250	-1.000	14.909	0.000	22.000	5.500	-9.409	6	0.0	-1.000	14.909
24	0.0	4.000	0.250	-1.000	13.909	0.000	18.000	4.500	-9.409	5	0.0	-1.000	13.909
25	0.0	4.000	0.250	-1.000	12.909	0.000	14.000	3.500	-9.409	4	0.0	-1.000	12.909
26	0.0	4.000	0.250	-1.000	11.909	0.000	10.000	2.500	-9.409	3	0.0	-1.000	11.909
27	0.0	4.000	0.250	-1.000	10.909	0.000	6.000	1.500	-9.409	2	0.0	-1.000	10.909
28	0.0	4.000	0.250	-1.000	9.909	0.000	2.000	0.500	-9.409	1	0.0	-1.000	9.909
29	0.0	2.000	0.250	-0.500	9.409	0.000	0.0	-0.000	-9.409	0	0.0	-0.500	9.409
30	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	-9.409	0	0.0	0.0	9.409
31	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	-9.409	0	0.0	0.0	9.409
32	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	-9.409	0	0.0	0.0	9.409
33	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	-9.409	0	0.0	0.0	9.409
34	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	-9.409	0	0.0	0.0	9.409
35	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	-9.409	0	0.0	0.0	9.409
36	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	-9.409	0	0.0	0.0	9.409
37	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	-9.409	0	0.0	0.0	9.409
38	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	-9.409	0	0.0	0.0	9.409

PROFITABILITY RATIO DETAIL

YEAR	EARNINGS PER SHARE	RETURN ON EQUITY--NI	RETURN ON EQUITY--CAP	COMMON EQUITY RATIO	TOTAL EXTERNAL FINANCING	TOTAL DEFERRED TAXES	PERCENT DEFERRED TAX
1981	1.00	10.00	10.00	50.00	-2.13	2.13	0.09
1982	1.00	10.00	10.00	50.00	-5.98	8.11	0.33
1983	1.00	10.00	10.00	50.00	-9.27	17.38	0.70
1984	1.00	10.00	10.00	50.00	-12.19	29.57	1.19
1985	1.00	10.00	10.00	50.00	-14.75	44.32	1.80
1986	1.00	10.00	10.00	50.00	-16.94	61.27	2.50
1987	1.00	10.00	10.00	50.00	-18.77	80.04	3.29
1988	1.00	10.00	10.00	50.00	-20.23	100.27	4.16
1989	1.00	10.00	10.00	50.00	-21.33	121.60	5.09
1990	1.00	10.00	10.00	50.00	-22.07	143.67	6.07
1991	1.00	10.00	10.00	50.00	-22.44	166.11	7.08
1992	1.00	10.00	10.00	50.00	-22.44	188.55	8.12
1993	1.00	10.00	10.00	50.00	-22.08	210.64	9.16
1994	1.00	10.00	10.00	50.00	-21.36	231.99	10.18
1995	1.00	10.00	10.00	50.00	-20.27	252.27	11.17
1996	1.00	10.00	10.00	50.00	-18.82	271.08	12.11
1997	1.00	10.00	10.00	50.00	-17.00	288.08	12.97
1998	1.00	10.00	10.00	50.00	-15.00	303.08	13.75
1999	1.00	10.00	10.00	50.00	-6.50	309.58	14.11
2000	1.00	10.00	10.00	50.00	-5.50	315.08	14.40
2001	1.00	10.00	10.00	50.00	-4.50	319.58	14.64
2002	1.00	10.00	10.00	50.00	-3.50	323.08	14.83
2003	1.00	10.00	10.00	50.00	-2.50	325.58	14.96
2004	1.00	10.00	10.00	50.00	-1.50	327.08	15.05
2005	1.00	10.00	10.00	50.00	-0.50	327.58	15.08
2006	1.00	10.00	10.00	50.00	-0.00	327.58	15.08
2007	1.00	10.00	10.00	50.00	-0.00	327.58	15.08
2008	1.00	10.00	10.00	50.00	0.00	327.58	15.08
2009	1.00	10.00	10.00	50.00	-0.00	327.58	15.08
2010	1.00	10.00	10.00	50.00	0.00	327.58	15.08
2011	1.00	10.00	10.00	50.00	-0.00	327.58	15.08
2012	1.00	10.00	10.00	50.00	0.00	327.58	15.08
2013	1.00	10.00	10.00	50.00	-0.00	327.58	15.08
2014	1.00	10.00	10.00	50.00	0.00	327.58	15.08
2015	1.00	10.00	10.00	50.00	-0.00	327.58	15.08
2016	1.00	10.00	10.00	50.00	0.00	327.58	15.08
2017	1.00	10.00	10.00	50.00	-0.00	327.58	15.08
2018	1.00	10.00	10.00	50.00	0.01	327.58	15.08

## DEFERRED TAX REPORT

## ADJUSTMENT IN YEAR OF RETIREMENT

PLANT NUMBER 1 ACCOUNT NUMBER 1.00

VINTAGE -- 1ST YEAR IN SERVICE 3  
TAX BASIS OF PLANT 100.000

YEAR	TAX DEPRECIATION	BOOK DEPRECIATION	TAX RATE	DEFERRED TAXES CURRENT	ACCUM- ULATED DEFERRALS	TAX DEPR LEFT	BOOK DEPR LEFT	REQUIRED RESERVE	EXCESS DEFERRED TAXES	REM- AINING LIFE	ADJUST- MENT	ADJUSTED DEFERRED TAXES	ADJ- USTED RESERVE
1	0.0	0.0	0.500	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0
2	0.0	0.0	0.500	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0
3	6.250	2.000	0.500	2.125	2.125	43.750	48.000	2.125	0.0	25	0.0	2.125	2.125
4	11.719	4.000	0.500	3.859	5.984	82.031	94.000	5.984	0.0	24	0.0	3.859	5.984
5	10.573	4.000	0.500	3.286	9.271	71.458	90.000	9.271	-0.000	23	0.0	3.286	9.271
6	9.844	4.000	0.500	2.922	12.193	61.615	86.000	12.193	-0.000	22	0.0	2.922	12.193
7	9.115	4.000	0.500	2.557	14.750	52.500	82.000	14.750	-0.000	21	0.0	2.557	14.750
8	8.385	4.000	0.500	2.193	16.943	44.115	78.000	16.943	0.0	20	0.0	2.193	16.943
9	7.656	4.000	0.500	1.828	18.771	36.458	74.000	18.771	0.0	19	0.0	1.828	18.771
10	6.927	4.000	0.500	1.464	20.234	29.531	70.000	20.234	0.000	18	0.0	1.464	20.234
11	6.198	4.000	0.500	1.099	21.333	23.333	66.000	21.333	0.000	17	0.0	1.099	21.333
12	5.469	4.000	0.500	0.734	22.068	17.865	62.000	22.068	0.000	16	0.0	0.734	22.068
13	4.740	4.000	0.500	0.370	22.437	13.125	58.000	22.437	0.000	15	0.0	0.370	22.437
14	4.010	4.000	0.500	0.005	22.443	9.115	54.000	22.443	0.000	14	0.0	0.005	22.443
15	3.281	4.000	0.500	-0.359	22.083	5.833	50.000	22.083	0.000	13	0.0	-0.359	22.083
16	2.552	4.000	0.500	-0.724	21.359	3.281	46.000	21.359	0.000	12	0.0	-0.724	21.359
17	1.823	4.000	0.500	-1.089	20.271	1.458	42.000	20.271	0.000	11	0.0	-1.089	20.271
18	1.094	4.000	0.500	-1.453	18.818	0.365	38.000	18.818	0.000	10	0.0	-1.453	18.818
19	0.365	4.000	0.500	-1.818	17.000	0.000	34.000	17.000	0.000	9	0.0	-1.818	17.000
20	0.0	4.000	0.250	-1.000	16.000	0.000	30.000	7.500	-8.500	8	0.0	-1.000	16.000
21	0.0	4.000	0.250	-1.000	15.000	0.000	26.000	6.500	-8.500	7	0.0	-1.000	15.000
22	0.0	4.000	0.250	-1.000	14.000	0.000	22.000	5.500	-8.500	6	0.0	-1.000	14.000
23	0.0	4.000	0.250	-1.000	13.000	0.000	18.000	4.500	-8.500	5	0.0	-1.000	13.000
24	0.0	4.000	0.250	-1.000	12.000	0.000	14.000	3.500	-8.500	4	0.0	-1.000	12.000
25	0.0	4.000	0.250	-1.000	11.000	0.000	10.000	2.500	-8.500	3	0.0	-1.000	11.000
26	0.0	4.000	0.250	-1.000	10.000	0.000	6.000	1.500	-8.500	2	0.0	-1.000	10.000
27	0.0	4.000	0.250	-1.000	9.000	0.000	2.000	0.500	-8.500	1	0.0	-1.000	9.000
28	0.0	2.000	0.250	-0.500	8.500	0.000	0.0	-0.000	-0.000	0	-8.500	-9.000	-0.000
29	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	-0.000	-0.000	-0.000
30	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
31	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
32	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
33	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
34	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
35	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
36	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
37	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
38	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000

Exhibit AF-3  
Page 4 of 5

## RATIO DETAIL

ADJUST AT RETIREMENT  
METHOD #2

YEAR	BEFORE TAX EXCL AFUDC	BEFORE TAX INCL AFUDC	AFTER TAX EXCL AFUDC	AFTER TAX INCL AFUDC	DEBT RATIO
1981	3.00	3.00	2.00	2.00	50.00
1982	3.00	3.00	2.00	2.00	50.00
1983	3.00	3.00	2.00	2.00	50.00
1984	3.00	3.00	2.00	2.00	50.00
1985	3.00	3.00	2.00	2.00	50.00
1986	3.00	3.00	2.00	2.00	50.00
1987	3.00	3.00	2.00	2.00	50.00
1988	3.00	3.00	2.00	2.00	50.00
1989	3.00	3.00	2.00	2.00	50.00
1990	3.00	3.00	2.00	2.00	50.00
1991	3.00	3.00	2.00	2.00	50.00
1992	3.00	3.00	2.00	2.00	50.00
1993	3.00	3.00	2.00	2.00	50.00
1994	3.00	3.00	2.00	2.00	50.00
1995	3.00	3.00	2.00	2.00	50.00
1996	3.00	3.00	2.00	2.00	50.00
1997	3.00	3.00	2.00	2.00	50.00
1998	3.00	3.00	2.00	2.00	50.00
1999	2.88	2.88	2.00	2.00	50.00
2000	2.33	2.33	2.00	2.00	50.00
2001	2.33	2.33	2.00	2.00	50.00
2002	2.33	2.33	2.00	2.00	50.00
2003	2.33	2.33	2.00	2.00	50.00
2004	2.33	2.33	2.00	2.00	50.00
2005	2.33	2.33	2.00	2.00	50.00
2006	2.24	2.24	2.00	2.00	50.00
2007	2.23	2.23	2.00	2.00	50.00
2008	2.22	2.22	2.00	2.00	50.00
2009	2.21	2.21	2.00	2.00	50.00
2010	2.20	2.20	2.00	2.00	50.00
2011	2.20	2.20	2.00	2.00	50.00
2012	2.20	2.20	2.00	2.00	50.00
2013	2.20	2.20	2.00	2.00	50.00
2014	2.20	2.20	2.00	2.00	50.00
2015	2.21	2.21	2.00	2.00	50.00
2016	2.21	2.21	2.00	2.00	50.00
2017	2.22	2.22	2.00	2.00	50.00
2018	2.33	2.33	2.00	2.00	50.00

Exhibit AF-4  
Adjustment in one period  
Page 1 of 5

DEFERRED TAX REPORT  
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SHORTENED AMORTIZATION PERIOD  
AMORTIZATION PERIOD FOR SURPLUS -- 1 YEARS

PLANT NUMBER 1 ACCOUNT NUMBER 1.00

VINTAGE -- 1ST YEAR IN SERVICE 2  
TAX BASIS OF PLANT 100.000

YEAR	TAX DEPRECI- ATION	BOOK DEPRECI- ATION	TAX RATE	DEFERRED TAXES CURRENT	ACCUM- ULATED DEFERRALS	TAX DEPR LEFT	BOOK DEPR LEFT	REQUIRED RESERVE	EXCESS DEFERRED TAXES	REM- AINING LIFE	ADJUST- MENT	ADJUSTED DEFERRED TAXES	ADJ- USTED RESERVE
1	0.0	0.0	0.500	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0
2	6.250	2.000	0.500	2.125	2.125	43.750	48.000	2.125	0.0	25	0.0	2.125	2.125
3	11.719	4.000	0.500	3.859	5.984	82.031	94.000	5.984	0.0	24	0.0	3.859	5.984
4	10.573	4.000	0.500	3.286	9.271	71.458	90.000	9.271	-0.000	23	0.0	3.286	9.271
5	9.844	4.000	0.500	2.922	12.193	61.615	86.000	12.193	-0.000	22	0.0	2.922	12.193
6	9.115	4.000	0.500	2.557	14.750	52.500	82.000	14.750	-0.000	21	0.0	2.557	14.750
7	8.385	4.000	0.500	2.193	16.943	44.115	78.000	16.943	0.0	20	0.0	2.193	16.943
8	7.656	4.000	0.500	1.828	18.771	36.458	74.000	18.771	0.0	19	0.0	1.828	18.771
9	6.927	4.000	0.500	1.464	20.234	29.531	70.000	20.234	0.000	18	0.0	1.464	20.234
10	6.198	4.000	0.500	1.099	21.333	23.333	66.000	21.333	0.000	17	0.0	1.099	21.333
11	5.469	4.000	0.500	0.734	22.068	17.865	62.000	22.068	0.000	16	0.0	0.734	22.068
12	4.740	4.000	0.500	0.370	22.437	13.125	58.000	22.437	0.000	15	0.0	0.370	22.437
13	4.010	4.000	0.500	0.005	22.443	9.115	54.000	22.443	0.000	14	0.0	0.005	22.443
14	3.281	4.000	0.500	-0.359	22.083	5.833	50.000	22.083	0.000	13	0.0	-0.359	22.083
15	2.552	4.000	0.500	-0.724	21.359	3.281	46.000	21.359	0.000	12	0.0	-0.724	21.359
16	1.823	4.000	0.500	-1.089	20.271	1.458	42.000	20.271	0.000	11	0.0	-1.089	20.271
17	1.094	4.000	0.500	-1.453	18.818	0.365	38.000	18.818	0.000	10	0.0	-1.453	18.818
18	0.365	4.000	0.500	-1.818	17.000	0.000	34.000	17.000	0.000	9	0.0	-1.818	17.000
19	0.0	4.000	0.500	-2.000	15.000	0.000	30.000	15.000	0.000	8	0.0	-2.000	15.000
20	0.0	4.000	0.250	-1.000	14.000	0.000	26.000	6.500	-0.000	7	-7.500	-8.500	6.500
21	0.0	4.000	0.250	-1.000	13.000	0.000	22.000	5.500	-0.000	6	0.0	-1.000	5.500
22	0.0	4.000	0.250	-1.000	12.000	0.000	18.000	4.500	-0.000	5	0.0	-1.000	4.500
23	0.0	4.000	0.250	-1.000	11.000	0.000	14.000	3.500	0.0	4	0.0	-1.000	3.500
24	0.0	4.000	0.250	-1.000	10.000	0.000	10.000	2.500	0.0	3	0.0	-1.000	2.500
25	0.0	4.000	0.250	-1.000	9.000	0.000	6.000	1.500	0.0	2	0.0	-1.000	1.500
26	0.0	4.000	0.250	-1.000	8.000	0.000	2.000	0.500	0.000	1	0.0	-1.000	0.500
27	0.0	2.000	0.250	-0.500	7.500	0.000	0.0	-0.000	0.000	0	0.000	-0.500	-0.000
28	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.000	0.000	-0.000
29	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
30	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
31	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
32	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
33	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
34	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
35	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
36	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
37	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
38	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000

Figure #6

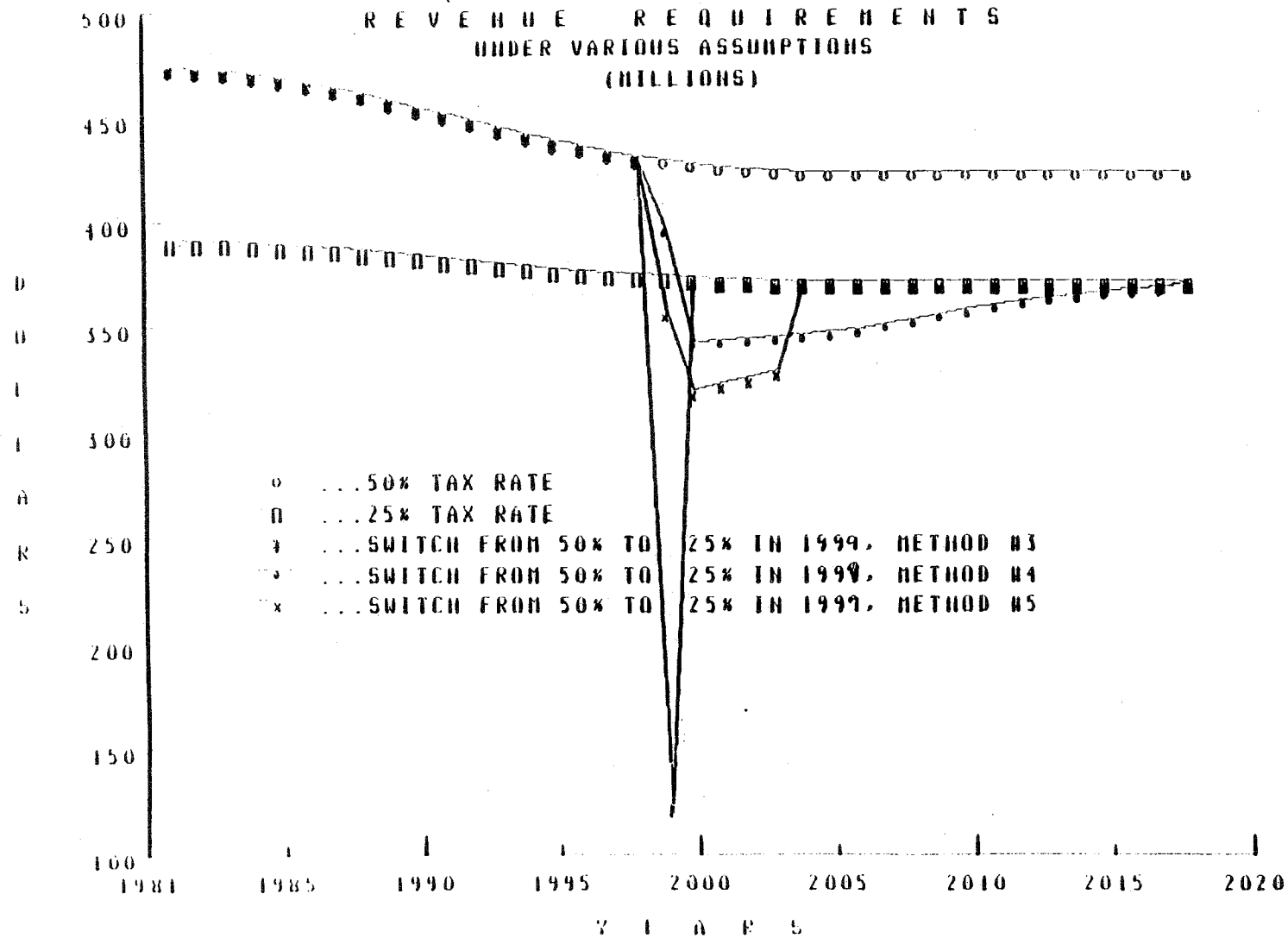
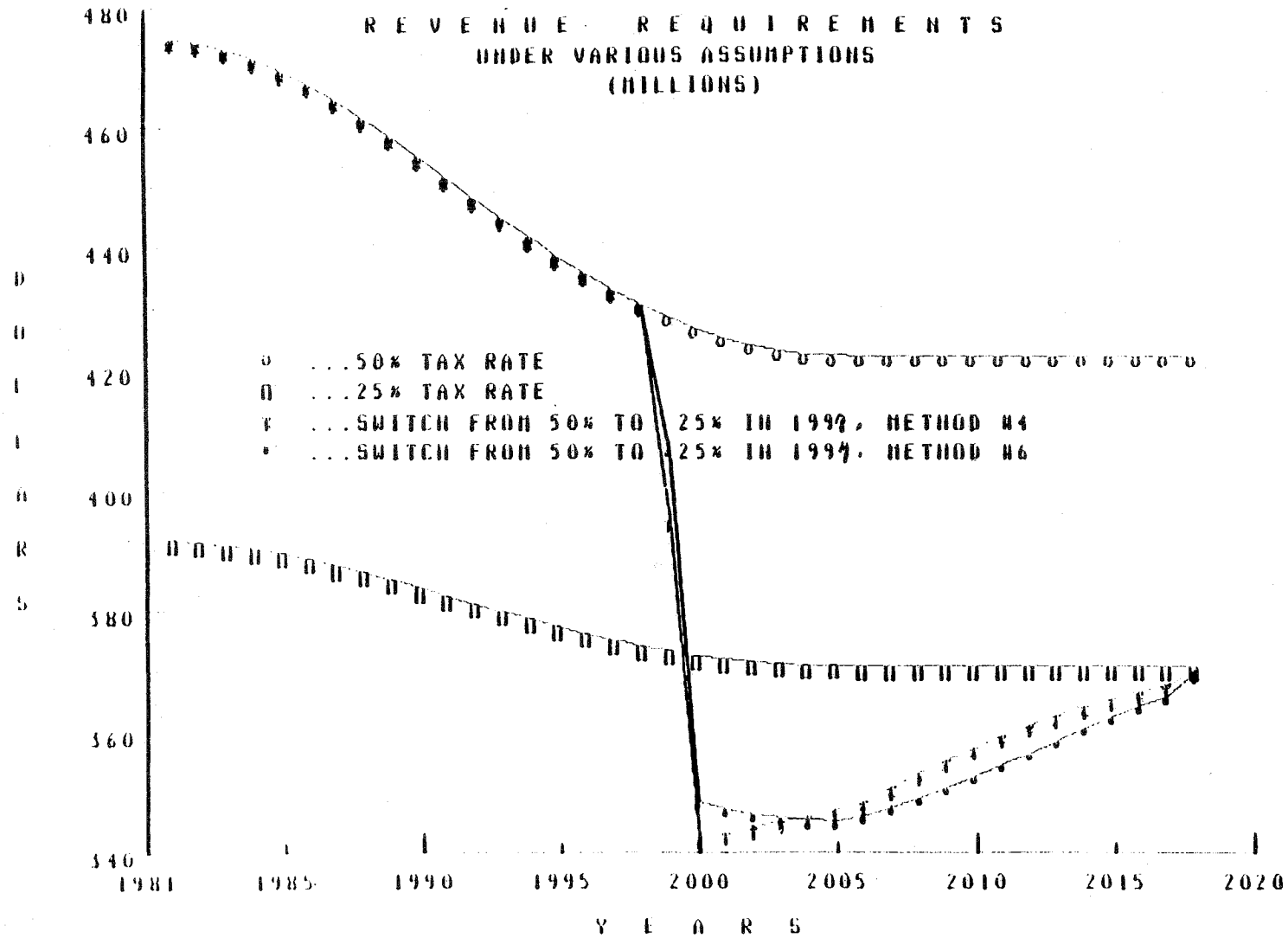


Figure #7



## Exhibit AF-7

Page 4 of 4

## PROFITABILITY RATIO DETAIL

YEAR	EARNINGS PER SHARE	RETURN ON EQUITY--NI	WEIGHTED AVERAGE TAX RATE METHOD #6		COMMON EQUITY RATIO	TOTAL EXTERNAL FINANCING	TOTAL DEFERRED TAXES	PERCENT DEFERRED TAX
			RETURN ON EQUITY--CAP					
1981	1.00	10.00	10.00		50.00	-2.13	2.13	0.09
1982	1.00	10.00	10.00		50.00	-5.98	8.11	0.33
1983	1.00	10.00	10.00		50.00	-9.27	17.38	0.70
1984	1.00	10.00	10.00		50.00	-12.19	29.57	1.19
1985	1.00	10.00	10.00		50.00	-14.75	44.32	1.80
1986	1.00	10.00	10.00		50.00	-16.94	61.27	2.50
1987	1.00	10.00	10.00		50.00	-18.77	80.04	3.29
1988	1.00	10.00	10.00		50.00	-20.23	100.27	4.16
1989	1.00	10.00	10.00		50.00	-21.33	121.60	5.09
1990	1.00	10.00	10.00		50.00	-22.07	143.67	6.07
1991	1.00	10.00	10.00		50.00	-22.44	166.11	7.08
1992	1.00	10.00	10.00		50.00	-22.44	188.55	8.12
1993	1.00	10.00	10.00		50.00	-22.08	210.64	9.16
1994	1.00	10.00	10.00		50.00	-21.36	231.99	10.18
1995	1.00	10.00	10.00		50.00	-20.27	252.27	11.17
1996	1.00	10.00	10.00		50.00	-18.82	271.08	12.11
1997	1.00	10.00	10.00		50.00	-17.00	288.08	12.97
1998	1.00	10.00	10.00		50.00	-15.00	303.08	13.75
1999	1.00	10.00	10.00		50.00	-1.78	304.86	13.88
2000	1.00	10.00	10.00		50.00	0.22	304.64	13.88
2001	1.00	10.00	10.00		50.00	2.22	302.42	13.77
2002	1.00	10.00	10.00		50.00	4.20	298.22	13.56
2003	1.00	10.00	10.00		50.00	6.17	292.04	13.25
2004	1.00	10.00	10.00		50.00	8.11	283.92	12.84
2005	1.00	10.00	10.00		50.00	10.01	273.91	12.33
2006	1.00	10.00	10.00		50.00	10.84	263.06	11.79
2007	1.00	10.00	10.00		50.00	10.60	252.45	11.26
2008	1.00	10.00	10.00		50.00	10.27	242.18	10.75
2009	1.00	10.00	10.00		50.00	9.82	232.35	10.27
2010	1.00	10.00	10.00		50.00	9.25	223.10	9.82
2011	1.00	10.00	10.00		50.00	8.55	214.54	9.40
2012	1.00	10.00	10.00		50.00	7.74	206.79	9.03
2013	1.00	10.00	10.00		50.00	6.84	199.94	8.71
2014	1.00	10.00	10.00		50.00	5.89	194.04	8.43
2015	1.00	10.00	10.00		50.00	4.93	189.09	8.19
2016	1.00	10.00	10.00		50.00	4.01	185.08	8.00
2017	1.00	10.00	10.00		50.00	3.14	181.93	7.85
2018	1.00	10.00	10.00		50.00	-0.01	181.93	7.85



Exhibit AF-4  
Page 3 of 5DEFERRED TAX REPORT  
-----SHORTENED AMORTIZATION PERIOD  
AMORTIZATION PERIOD FOR SURPLUS -- 1 YEARS

PLANT NUMBER 1 ACCOUNT NUMBER 1.00

VINIAGE -- 1ST YEAR IN SERVICE 4  
TAX BASIS OF PLANT 100.000

YEAR	TAX DEPREC- IATION	BOOK DEPREC- IATION	TAX RATE	DEFERRED TAXES CURRENT	ACCUM- ULATED DEFERRALS	TAX DEPR LEFT	BOOK DEPR LEFT	REQUIRED RESERVE	EXCESS DEFERRED TAXES	REM- AINING LIFE	ADJUST- MENT	ADJUSTED DEFERRED TAXES	ADJ- USTED RESERVE
1	0.0	0.0	0.500	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0
2	0.0	0.0	0.500	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0
3	0.0	0.0	0.500	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0
4	6.250	2.000	0.500	2.125	2.125	43.750	48.000	2.125	0.0	25	0.0	2.125	2.125
5	11.719	4.000	0.500	3.859	5.984	82.031	94.000	5.984	0.0	24	0.0	3.859	5.984
6	10.573	4.000	0.500	3.286	9.271	71.458	90.000	9.271	-0.000	23	0.0	3.286	9.271
7	9.844	4.000	0.500	2.922	12.193	61.615	86.000	12.193	-0.000	22	0.0	2.922	12.193
8	9.115	4.000	0.500	2.557	14.750	52.500	82.000	14.750	-0.000	21	0.0	2.557	14.750
9	8.385	4.000	0.500	2.193	16.943	44.115	78.000	16.943	0.0	20	0.0	2.193	16.943
10	7.656	4.000	0.500	1.828	18.771	36.458	74.000	18.771	0.0	19	0.0	1.828	18.771
11	6.927	4.000	0.500	1.464	20.234	29.531	70.000	20.234	0.000	18	0.0	1.464	20.234
12	6.198	4.000	0.500	1.099	21.333	23.333	66.000	21.333	0.000	17	0.0	1.099	21.333
13	5.469	4.000	0.500	0.734	22.068	17.865	62.000	22.068	0.000	16	0.0	0.734	22.068
14	4.740	4.000	0.500	0.370	22.437	13.125	58.000	22.437	0.000	15	0.0	0.370	22.437
15	4.010	4.000	0.500	0.005	22.443	9.115	54.000	22.443	0.000	14	0.0	0.005	22.443
16	3.281	4.000	0.500	-0.359	22.083	5.833	50.000	22.083	0.000	13	0.0	-0.359	22.083
17	2.552	4.000	0.500	-0.724	21.359	3.281	46.000	21.359	0.000	12	0.0	-0.724	21.359
18	1.823	4.000	0.500	-1.089	20.271	1.458	42.000	20.271	0.000	11	0.0	-1.089	20.271
19	1.094	4.000	0.500	-1.453	18.818	0.365	38.000	18.818	0.000	10	0.0	-1.453	18.818
20	0.365	4.000	0.250	-0.909	17.909	0.000	34.000	8.500	-0.000	9	-9.409	-10.318	8.500
21	0.0	4.000	0.250	-1.000	16.909	0.000	30.000	7.500	-0.000	8	0.0	-1.000	7.500
22	0.0	4.000	0.250	-1.000	15.909	0.000	26.000	6.500	-0.000	7	0.0	-1.000	6.500
23	0.0	4.000	0.250	-1.000	14.909	0.000	22.000	5.500	-0.000	6	0.0	-1.000	5.500
24	0.0	4.000	0.250	-1.000	13.909	0.000	18.000	4.500	-0.000	5	0.0	-1.000	4.500
25	0.0	4.000	0.250	-1.000	12.909	0.000	14.000	3.500	-0.000	4	0.0	-1.000	3.500
26	0.0	4.000	0.250	-1.000	11.909	0.000	10.000	2.500	-0.000	3	0.0	-1.000	2.500
27	0.0	4.000	0.250	-1.000	10.909	0.000	6.000	1.500	-0.000	2	0.0	-1.000	1.500
28	0.0	4.000	0.250	-1.000	9.909	0.000	2.000	0.500	-0.000	1	0.0	-1.000	0.500
29	0.0	2.000	0.250	-0.500	9.409	0.000	0.0	-0.000	0.000	0	-0.000	-0.500	-0.000
30	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	0.0	0	0.000	0.000	-0.000
31	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
32	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
33	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
34	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
35	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
36	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
37	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
38	0.0	0.0	0.250	0.0	9.409	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000

Exhibit AF-4  
Page 5 of 5  
PROFITABILITY RATIO DETAIL

YEAR	EARNINGS PER SHARE	ADJUST IN ONE PERIOD METHOD #3		COMMON EQUITY RATIO	TOTAL EXTERNAL FINANCING	TOTAL DEFERRED TAXES	PERCENT DEFERRED TAX
		RETURN ON EQUITY--NI	RETURN ON EQUITY--CAP				
1981	1.00	10.00	10.00	50.00	-2.13	2.13	0.09
1982	1.00	10.00	10.00	50.00	-5.98	8.11	0.33
1983	1.00	10.00	10.00	50.00	-9.27	17.38	0.70
1984	1.00	10.00	10.00	50.00	-12.19	29.57	1.19
1985	1.00	10.00	10.00	50.00	-14.75	44.32	1.80
1986	1.00	10.00	10.00	50.00	-16.94	61.27	2.50
1987	1.00	10.00	10.00	50.00	-18.77	80.04	3.29
1988	1.00	10.00	10.00	50.00	-20.23	100.27	4.16
1989	1.00	10.00	10.00	50.00	-21.33	121.60	5.09
1990	1.00	10.00	10.00	50.00	-22.07	143.67	6.07
1991	1.00	10.00	10.00	50.00	-22.44	166.11	7.08
1992	1.00	10.00	10.00	50.00	-22.44	188.55	8.12
1993	1.00	10.00	10.00	50.00	-22.08	210.64	9.16
1994	1.00	10.00	10.00	50.00	-21.36	231.99	10.18
1995	1.00	10.00	10.00	50.00	-20.27	252.27	11.17
1996	1.00	10.00	10.00	50.00	-18.82	271.08	12.11
1997	1.00	10.00	10.00	50.00	-17.00	288.08	12.97
1998	1.00	10.00	10.00	50.00	-15.00	303.08	13.75
1999	1.00	10.00	10.00	50.00	145.04	158.04	6.96
2000	1.00	10.00	10.00	50.00	-5.50	163.54	6.99
2001	1.00	10.00	10.00	50.00	-4.50	168.04	7.20
2002	1.00	10.00	10.00	50.00	-3.50	171.54	7.36
2003	1.00	10.00	10.00	50.00	-2.50	174.04	7.48
2004	1.00	10.00	10.00	50.00	-1.50	175.54	7.55
2005	1.00	10.00	10.00	50.00	-0.50	176.04	7.57
2006	1.00	10.00	10.00	50.00	-0.00	176.04	7.58
2007	1.00	10.00	10.00	50.00	-0.00	176.04	7.58
2008	1.00	10.00	10.00	50.00	-0.00	176.04	7.58
2009	1.00	10.00	10.00	50.00	-0.00	176.04	7.58
2010	1.00	10.00	10.00	50.00	-0.00	176.04	7.58
2011	1.00	10.00	10.00	50.00	-0.01	176.04	7.58
2012	1.00	10.00	10.00	50.00	-0.01	176.04	7.58
2013	1.00	10.00	10.00	50.00	-0.01	176.04	7.58
2014	1.00	10.00	10.00	50.00	-0.01	176.04	7.58
2015	1.00	10.00	10.00	50.00	-0.01	176.04	7.58
2016	1.00	10.00	10.00	50.00	-0.01	176.04	7.58
2017	1.00	10.00	10.00	50.00	-0.01	176.04	7.58
2018	1.00	10.00	10.00	50.00	-0.01	176.04	7.58

Exhibit AF-5  
Page 2 of 5

## DEFERRED TAX REPORT

## AMORTIZATION OVER REMAINING LIFE

PLANT NUMBER 1 ACCOUNT NUMBER 1.00

VINTAGE -- 1ST YEAR IN SERVICE 3  
TAX BASIS OF PLANT 100.000

YEAR	TAX DEPRECIATION	BOOK DEPRECIATION	TAX RATE	DEFERRED TAXES CURRENT	ACCUM- ULATED DEFERRALS	TAX DEPR LEFT	BOOK DEPR LEFT	REQUIRED RESERVE	EXCESS DEFERRED TAXES	REM- AINING LIFE	ADJUST- MENT	ADJUSTED DEFERRED TAXES	ADJ- USTED RESERVE
1	0.0	0.0	0.500	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0
2	0.0	0.0	0.500	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0
3	6.250	2.000	0.500	2.125	2.125	43.750	48.000	2.125	0.0	25	0.0	2.125	2.125
4	11.719	4.000	0.500	3.859	5.984	82.031	94.000	5.984	0.0	24	0.0	3.859	5.984
5	10.573	4.000	0.500	3.286	9.271	71.458	90.000	9.271	-0.000	23	0.0	3.286	9.271
6	9.844	4.000	0.500	2.922	12.193	61.615	86.000	12.193	-0.000	22	0.0	2.922	12.193
7	9.115	4.000	0.500	2.557	14.750	52.500	82.000	14.750	-0.000	21	0.0	2.557	14.750
8	8.385	4.000	0.500	2.193	16.943	44.115	78.000	16.943	0.0	20	0.0	2.193	16.943
9	7.656	4.000	0.500	1.828	18.771	36.458	74.000	18.771	0.0	19	0.0	1.828	18.771
10	6.927	4.000	0.500	1.464	20.234	29.531	70.000	20.234	0.000	18	0.0	1.464	20.234
11	6.198	4.000	0.500	1.099	21.333	23.333	66.000	21.333	0.000	17	0.0	1.099	21.333
12	5.469	4.000	0.500	0.734	22.068	17.865	62.000	22.068	0.000	16	0.0	0.734	22.068
13	4.740	4.000	0.500	0.370	22.437	13.125	58.000	22.437	0.000	15	0.0	0.370	22.437
14	4.010	4.000	0.500	0.005	22.443	9.115	54.000	22.443	0.000	14	0.0	0.005	22.443
15	3.281	4.000	0.500	-0.359	22.083	5.833	50.000	22.083	0.000	13	0.0	-0.359	22.083
16	2.552	4.000	0.500	-0.724	21.359	3.281	46.000	21.359	0.000	12	0.0	-0.724	21.359
17	1.823	4.000	0.500	-1.089	20.271	1.458	42.000	20.271	0.000	11	0.0	-1.089	20.271
18	1.094	4.000	0.500	-1.453	18.818	0.365	38.000	18.818	0.000	10	0.0	-1.453	18.818
19	0.365	4.000	0.500	-1.818	17.000	0.000	34.000	17.000	0.000	9	0.0	-1.818	17.000
20	0.0	4.000	0.250	-1.000	16.000	0.000	30.000	7.500	-7.555	8	-0.944	-1.944	15.055
21	0.0	4.000	0.250	-1.000	15.000	0.000	26.000	6.500	-6.611	7	-0.944	-1.944	13.111
22	0.0	4.000	0.250	-1.000	14.000	0.000	22.000	5.500	-5.667	6	-0.944	-1.944	11.167
23	0.0	4.000	0.250	-1.000	13.000	0.000	18.000	4.500	-4.722	5	-0.944	-1.944	9.222
24	0.0	4.000	0.250	-1.000	12.000	0.000	14.000	3.500	-3.778	4	-0.944	-1.944	7.278
25	0.0	4.000	0.250	-1.000	11.000	0.000	10.000	2.500	-2.833	3	-0.944	-1.944	5.333
26	0.0	4.000	0.250	-1.000	10.000	0.000	6.000	1.500	-1.889	2	-0.944	-1.944	3.389
27	0.0	4.000	0.250	-1.000	9.000	0.000	2.000	0.500	-0.944	1	-0.944	-1.944	1.444
28	0.0	2.000	0.250	-0.500	8.500	0.000	0.0	-0.000	0.000	0	-0.944	-1.444	-0.000
29	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.000	0.000	-0.000
30	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
31	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
32	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
33	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
34	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
35	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
36	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
37	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
38	0.0	0.0	0.250	0.0	8.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000

Exhibit AF-5  
Page 4 of 5

## RATIO DETAIL

ADJUST OVER THE REMAINING LIFE  
METHOD #4

YEAR	BEFORE TAX EXCL AFUDC	BEFORE TAX INCL AFUDC	AFTER TAX EXCL AFUDC	AFTER TAX INCL AFUDC	DEBT RATIO
1981	3.00	3.00	2.00	2.00	50.00
1982	3.00	3.00	2.00	2.00	50.00
1983	3.00	3.00	2.00	2.00	50.00
1984	3.00	3.00	2.00	2.00	50.00
1985	3.00	3.00	2.00	2.00	50.00
1986	3.00	3.00	2.00	2.00	50.00
1987	3.00	3.00	2.00	2.00	50.00
1988	3.00	3.00	2.00	2.00	50.00
1989	3.00	3.00	2.00	2.00	50.00
1990	3.00	3.00	2.00	2.00	50.00
1991	3.00	3.00	2.00	2.00	50.00
1992	3.00	3.00	2.00	2.00	50.00
1993	3.00	3.00	2.00	2.00	50.00
1994	3.00	3.00	2.00	2.00	50.00
1995	3.00	3.00	2.00	2.00	50.00
1996	3.00	3.00	2.00	2.00	50.00
1997	3.00	3.00	2.00	2.00	50.00
1998	3.00	3.00	2.00	2.00	50.00
1999	2.68	2.68	2.00	2.00	50.00
2000	2.20	2.20	2.00	2.00	50.00
2001	2.20	2.20	2.00	2.00	50.00
2002	2.20	2.20	2.00	2.00	50.00
2003	2.20	2.20	2.00	2.00	50.00
2004	2.20	2.20	2.00	2.00	50.00
2005	2.20	2.20	2.00	2.00	50.00
2006	2.21	2.21	2.00	2.00	50.00
2007	2.22	2.22	2.00	2.00	50.00
2008	2.23	2.23	2.00	2.00	50.00
2009	2.24	2.24	2.00	2.00	50.00
2010	2.25	2.25	2.00	2.00	50.00
2011	2.26	2.26	2.00	2.00	50.00
2012	2.27	2.27	2.00	2.00	50.00
2013	2.28	2.28	2.00	2.00	50.00
2014	2.29	2.29	2.00	2.00	50.00
2015	2.30	2.30	2.00	2.00	50.00
2016	2.30	2.30	2.00	2.00	50.00
2017	2.31	2.31	2.00	2.00	50.00
2018	2.33	2.33	2.00	2.00	50.00

Exhibit AF-6  
5 Year Amortization  
Page 1 of 4

DEFERRED TAX REPORT  
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SHORTENED AMORTIZATION PERIOD  
AMORTIZATION PERIOD FOR SURPLUS -- 5 YEARS

PLANT NUMBER 1 ACCOUNT NUMBER 1.00

VINTAGE -- 1ST YEAR IN SERVICE 2  
TAX BASIS OF PLANT 100.000

YEAR	TAX DEPREC- IATION	BOOK DEPREC- IATION	TAX RATE	DEFERRED TAXES CURRENT	ACCUM- ULATED DEFERRALS	TAX DEPR LEFT	BOOK DEPR LEFT	REQUIRED RESERVE	EXCESS DEFERRED TAXES	REM- AINING LIFE	ADJUST- MENT	ADJUSTED DEFERRED TAXES	ADJ- USTED RESERVE
1	0.0	0.0	0.500	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0
2	6.250	2.000	0.500	2.125	2.125	43.750	48.000	2.125	0.0	25	0.0	2.125	2.125
3	11.719	4.000	0.500	3.859	5.984	82.031	94.000	5.984	0.0	24	0.0	3.859	5.984
4	10.573	4.000	0.500	3.286	9.271	71.458	90.000	9.271	-0.000	23	0.0	3.286	9.271
5	9.844	4.000	0.500	2.922	12.193	61.615	86.000	12.193	-0.000	22	0.0	2.922	12.193
6	9.115	4.000	0.500	2.557	14.750	52.500	82.000	14.750	-0.000	21	0.0	2.557	14.750
7	8.385	4.000	0.500	2.193	16.943	44.115	78.000	16.943	0.0	20	0.0	2.193	16.943
8	7.656	4.000	0.500	1.828	18.771	36.458	74.000	18.771	0.0	19	0.0	1.828	18.771
9	6.927	4.000	0.500	1.464	20.234	29.531	70.000	20.234	0.000	18	0.0	1.464	20.234
10	6.198	4.000	0.500	1.099	21.333	23.333	66.000	21.333	0.000	17	0.0	1.099	21.333
11	5.469	4.000	0.500	0.734	22.068	17.865	62.000	22.068	0.000	16	0.0	0.734	22.068
12	4.740	4.000	0.500	0.370	22.437	13.125	58.000	22.437	0.000	15	0.0	0.370	22.437
13	4.010	4.000	0.500	0.005	22.443	9.115	54.000	22.443	0.000	14	0.0	0.005	22.443
14	3.281	4.000	0.500	-0.359	22.083	5.833	50.000	22.083	0.000	13	0.0	-0.359	22.083
15	2.552	4.000	0.500	-0.724	21.359	3.281	46.000	21.359	0.000	12	0.0	-0.724	21.359
16	1.823	4.000	0.500	-1.089	20.271	1.458	42.000	20.271	0.000	11	0.0	-1.089	20.271
17	1.094	4.000	0.500	-1.453	18.818	0.365	38.000	18.818	0.000	10	0.0	-1.453	18.818
18	0.365	4.000	0.500	-1.818	17.000	0.000	34.000	17.000	0.000	9	0.0	-1.818	17.000
19	0.0	4.000	0.500	-2.000	15.000	0.000	30.000	15.000	0.000	8	0.0	-2.000	15.000
20	0.0	4.000	0.250	-1.000	14.000	0.000	26.000	6.500	-6.000	7	-1.500	-2.500	12.500
21	0.0	4.000	0.250	-1.000	13.000	0.000	22.000	5.500	-4.500	6	-1.500	-2.500	10.000
22	0.0	4.000	0.250	-1.000	12.000	0.000	18.000	4.500	-3.000	5	-1.500	-2.500	7.500
23	0.0	4.000	0.250	-1.000	11.000	0.000	14.000	3.500	-1.500	4	-1.500	-2.500	5.000
24	0.0	4.000	0.250	-1.000	10.000	0.000	10.000	2.500	-0.000	3	-1.500	-2.500	2.500
25	0.0	4.000	0.250	-1.000	9.000	0.000	6.000	1.500	-0.000	2	0.0	-1.000	1.500
26	0.0	4.000	0.250	-1.000	8.000	0.000	2.000	0.500	-0.000	1	0.0	-1.000	0.500
27	0.0	2.000	0.250	-0.500	7.500	0.000	0.0	-0.000	0.000	0	-0.000	-0.500	-0.000
28	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.000	0.000	-0.000
29	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
30	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
31	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
32	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
33	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
34	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
35	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
36	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
37	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
38	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000

Exhibit AF-6  
Page 3 of 4

## RATIO DETAIL

## METHOD #5

YEAR	BEFORE TAX EXCL AFUDC	BEFORE TAX INCL AFUDC	AFTER TAX EXCL AFUDC	AFTER TAX INCL AFUDC	DEBT RATIO
1981	3.00	3.00	2.00	2.00	50.00
1982	3.00	3.00	2.00	2.00	50.00
1983	3.00	3.00	2.00	2.00	50.00
1984	3.00	3.00	2.00	2.00	50.00
1985	3.00	3.00	2.00	2.00	50.00
1986	3.00	3.00	2.00	2.00	50.00
1987	3.00	3.00	2.00	2.00	50.00
1988	3.00	3.00	2.00	2.00	50.00
1989	3.00	3.00	2.00	2.00	50.00
1990	3.00	3.00	2.00	2.00	50.00
1991	3.00	3.00	2.00	2.00	50.00
1992	3.00	3.00	2.00	2.00	50.00
1993	3.00	3.00	2.00	2.00	50.00
1994	3.00	3.00	2.00	2.00	50.00
1995	3.00	3.00	2.00	2.00	50.00
1996	3.00	3.00	2.00	2.00	50.00
1997	3.00	3.00	2.00	2.00	50.00
1998	3.00	3.00	2.00	2.00	50.00
1999	2.33	2.33	2.00	2.00	50.00
2000	1.97	1.97	2.00	2.00	50.00
2001	1.98	1.98	2.00	2.00	50.00
2002	1.98	1.98	2.00	2.00	50.00
2003	1.98	1.98	2.00	2.00	50.00
2004	2.33	2.33	2.00	2.00	50.00
2005	2.33	2.33	2.00	2.00	50.00
2006	2.33	2.33	2.00	2.00	50.00
2007	2.33	2.33	2.00	2.00	50.00
2008	2.33	2.33	2.00	2.00	50.00
2009	2.33	2.33	2.00	2.00	50.00
2010	2.33	2.33	2.00	2.00	50.00
2011	2.33	2.33	2.00	2.00	50.00
2012	2.33	2.33	2.00	2.00	50.00
2013	2.33	2.33	2.00	2.00	50.00
2014	2.33	2.33	2.00	2.00	50.00
2015	2.33	2.33	2.00	2.00	50.00
2016	2.33	2.33	2.00	2.00	50.00
2017	2.33	2.33	2.00	2.00	50.00
2018	2.33	2.33	2.00	2.00	50.00

Exhibit AF-7  
Weighted Average Method  
Page 1 of 4

## DEFERRED TAX REPORT

## REVERSALS AT WEIGHTED AVERAGE RATE

PLANT NUMBER 1 ACCOUNT NUMBER 1.00		VINTAGE -- 1ST YEAR IN SERVICE 2		TAX BASIS OF PLANT 100.000									
YEAR	TAX DEPREC- IATION	BOOK DEPREC- IATION	TAX RATE	DEFERRED TAXES CURRENT	ACCUM- ULATED DEFERRALS	TAX DEPR LEFT	BOOK DEPR LEFT	REQUIRED RESERVE	WEIGHTED AVERAGE RATE	REM- AINING LIFE	ADJUST- MENT	ADJUSTED DEFERRED TAXES	ADJ- USTED RESERVE
1	0.0	0.0	0.500	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0
2	6.250	2.000	0.500	2.125	2.125	43.750	48.000	2.125	0.0	25	0.0	2.125	2.125
3	11.719	4.000	0.500	3.859	5.984	82.031	94.000	5.984	0.0	24	0.0	3.859	5.984
4	10.573	4.000	0.500	3.286	9.271	71.458	90.000	9.271	0.0	23	0.0	3.286	9.271
5	9.844	4.000	0.500	2.922	12.193	61.615	86.000	12.193	0.0	22	0.0	2.922	12.193
6	9.115	4.000	0.500	2.557	14.750	52.500	82.000	14.750	0.0	21	0.0	2.557	14.750
7	8.385	4.000	0.500	2.193	16.943	44.115	78.000	16.943	0.0	20	0.0	2.193	16.943
8	7.656	4.000	0.500	1.828	18.771	36.458	74.000	18.771	0.0	19	0.0	1.828	18.771
9	6.927	4.000	0.500	1.464	20.234	29.531	70.000	20.234	0.0	18	0.0	1.464	20.234
10	6.198	4.000	0.500	1.099	21.333	23.333	66.000	21.333	0.0	17	0.0	1.099	21.333
11	5.469	4.000	0.500	0.734	22.068	17.865	62.000	22.068	0.0	16	0.0	0.734	22.068
12	4.740	4.000	0.500	0.370	22.437	13.125	58.000	22.437	0.0	15	0.0	0.370	22.437
13	4.010	4.000	0.500	0.005	22.443	9.115	54.000	22.443	0.0	14	0.0	0.005	22.443
14	3.281	4.000	0.500	-0.359	22.083	5.833	50.000	22.083	0.500	13	0.000	-0.359	22.083
15	2.552	4.000	0.500	-0.724	21.359	3.281	46.000	21.359	0.500	12	0.000	-0.724	21.359
16	1.823	4.000	0.500	-1.089	20.271	1.458	42.000	20.271	0.500	11	0.000	-1.089	20.271
17	1.094	4.000	0.500	-1.453	18.818	0.365	38.000	18.818	0.500	10	0.000	-1.453	18.818
18	0.365	4.000	0.500	-1.818	17.000	0.000	34.000	17.000	0.500	9	0.000	-1.818	17.000
19	0.0	4.000	0.500	-2.000	15.000	0.000	30.000	15.000	0.500	8	0.000	-2.000	15.000
20	0.0	4.000	0.250	-1.000	14.000	0.000	26.000	6.500	0.500	7	-1.000	-2.000	13.000
21	0.0	4.000	0.250	-1.000	13.000	0.000	22.000	5.500	0.500	6	-1.000	-2.000	11.000
22	0.0	4.000	0.250	-1.000	12.000	0.000	18.000	4.500	0.500	5	-1.000	-2.000	9.000
23	0.0	4.000	0.250	-1.000	11.000	0.000	14.000	3.500	0.500	4	-1.000	-2.000	7.000
24	0.0	4.000	0.250	-1.000	10.000	0.000	10.000	2.500	0.500	3	-1.000	-2.000	5.000
25	0.0	4.000	0.250	-1.000	9.000	0.000	6.000	1.500	0.500	2	-1.000	-2.000	3.000
26	0.0	4.000	0.250	-1.000	8.000	0.000	2.000	0.500	0.500	1	-1.000	-2.000	1.000
27	0.0	2.000	0.250	-0.500	7.500	0.000	0.0	-0.000	0.0	0	-0.500	-1.000	-0.000
28	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
29	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
30	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
31	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
32	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
33	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
34	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
35	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
36	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
37	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000
38	0.0	0.0	0.250	0.0	7.500	0.000	0.0	-0.000	0.0	0	0.0	0.0	-0.000

Exhibit AF-7  
Page 3 of 4

## RATIO DETAIL

WEIGHTED AVERAGE TAX RATE  
METHOD #6

YEAR	BEFORE TAX EXCL AFUDC	BEFORE TAX INCL AFUDC	AFTER TAX EXCL AFUDC	AFTER TAX INCL AFUDC	DEBT RATIO
1981	3.00	3.00	2.00	2.00	50.00
1982	3.00	3.00	2.00	2.00	50.00
1983	3.00	3.00	2.00	2.00	50.00
1984	3.00	3.00	2.00	2.00	50.00
1985	3.00	3.00	2.00	2.00	50.00
1986	3.00	3.00	2.00	2.00	50.00
1987	3.00	3.00	2.00	2.00	50.00
1988	3.00	3.00	2.00	2.00	50.00
1989	3.00	3.00	2.00	2.00	50.00
1990	3.00	3.00	2.00	2.00	50.00
1991	3.00	3.00	2.00	2.00	50.00
1992	3.00	3.00	2.00	2.00	50.00
1993	3.00	3.00	2.00	2.00	50.00
1994	3.00	3.00	2.00	2.00	50.00
1995	3.00	3.00	2.00	2.00	50.00
1996	3.00	3.00	2.00	2.00	50.00
1997	3.00	3.00	2.00	2.00	50.00
1998	3.00	3.00	2.00	2.00	50.00
1999	2.80	2.80	2.00	2.00	50.00
2000	2.26	2.26	2.00	2.00	50.00
2001	2.25	2.25	2.00	2.00	50.00
2002	2.24	2.24	2.00	2.00	50.00
2003	2.23	2.23	2.00	2.00	50.00
2004	2.22	2.22	2.00	2.00	50.00
2005	2.21	2.21	2.00	2.00	50.00
2006	2.20	2.20	2.00	2.00	50.00
2007	2.21	2.21	2.00	2.00	50.00
2008	2.21	2.21	2.00	2.00	50.00
2009	2.22	2.22	2.00	2.00	50.00
2010	2.22	2.22	2.00	2.00	50.00
2011	2.23	2.23	2.00	2.00	50.00
2012	2.24	2.24	2.00	2.00	50.00
2013	2.25	2.25	2.00	2.00	50.00
2014	2.27	2.27	2.00	2.00	50.00
2015	2.28	2.28	2.00	2.00	50.00
2016	2.29	2.29	2.00	2.00	50.00
2017	2.30	2.30	2.00	2.00	50.00
2018	2.33	2.33	2.00	2.00	50.00



CORPORATE INCOME TAX RATES ON ORDINARY INCOME

<u>Year</u>	<u>True Federal Rate</u>	<u>Effective Federal Rate</u>	<u>Illinois Rate</u>	<u>Combined Effective Rate</u>
1954	52 %	52 %	-	52 %
1955	52	52	-	52
1956	52	52	-	52
1957	52	52	-	52
1958	52	52	-	52
1959	52	52	-	52
1960	52	52	-	52
1961	52	52	-	52
1962	52	52	-	52
1963	52	52	-	52
1964	50	50	-	50
1965	48	48	-	48
1966	48	48	-	48
1967	48	48	-	48
1968	52.8	52.8	-	52.8
1969	52.8	51.92	4%(a)	53.587
1970	49.2	47.232	4	51.232
1971	48	46.08	4	50.08
1972	48	46.08	4	50.08
1973	48	46.08	4	50.08
1974	48	46.08	4	50.08
1975	48	46.08	4	50.08
1976	48	46.08	4	50.08
1977	48	46.08	4	50.08
1978	48	46.08	4	50.08
1979	46	43.608	5.2(1)	48.808
1980	46	43.056	6.4	49.456
1981	46	43.056	6.4	49.456
1982	46	43.056	6.4	49.456

(1) This rate may vary for companies operating in more than one state.